



**BHARATHIDASAN UNIVERSITY, TIRUCHIRAPPALLI- 620 024**

**ENVIRONMENTAL STUDIES – Syllabus (updated on 21.11.2016)**

**(Applicable to the candidates admitted from the Academic year 2016-17 onwards)**

- Unit: 1**      The Multidisciplinary nature of environmental studies  
Definition, scope and importance. (2 lectures)  
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, 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, dams benefits and problems.
  - c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
  - d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
  - e) Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies.
  - f) Land resources: Land as a resources, land degradation, man induced Landslides, soil erosion and desertification.
- Role of an individual in conservation of natural resources.
  - Equitable use of resources for sustainable lifestyles.
- (8 lectures)
- 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:-

- a. Forest ecosystem
- b. Grassland ecosystem
- c. Desert ecosystem
- d. Aquatic ecosystems, (ponds, streams, lakes, rivers, oceans, estuaries)

(6 lectures)

#### **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.

(8 lectures)

#### **Unit: 5      Environmental Pollution**

##### Definition

Causes, effects and control measures of :

- a. Air Pollution
  - b. Water Pollution
  - c. Soil Pollution
  - d. Marine Pollution
  - e. Noise pollution
  - f. Thermal Pollution
  - g. Nuclear hazards
- Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
  - Role of an individual in prevention of pollution
  - Pollution case studies
  - Disaster management: floods, earthquake, cyclone and landslides.
  - Ill-Effects of Fireworks: Firework and Celebrations, Health Hazards, Types of Fire, Firework and Safety

**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.

(7 lectures)

**Unit: 7 Human Population and the Environment**

- Population growth, variation among nations.
- Population explosion – Family Welfare Programmes
- 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 to a local area to document environmental assets-river / forest/ grassland/ hill / mountain

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(M) Magazine (R) Reference (TB) Textbook

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