

## ENVIRONMENTAL STUDIES AND HUMAN RIGHTS

4 credits  
Objective

72 hrs

- To develop the sense of awareness among the students about the environment and its various problems and to help the students in realizing the inter-relationship between man and environment and helps to protect the nature and natural resources.
- To help the students in acquiring the basic knowledge about environment and the social norms that provide unity with environmental characteristics and create positive attitude about the environment.

### Module I

15 hrs

#### Unit 1: Concept of ecosystem

- 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.

#### Unit 2: Types of ecosystem

- Forest ecosystem, Desert ecosystem, Grassland Ecosystem, Fresh water ecosystem-lentic and lotic, Marine ecosystem- Introduction, types, characteristic features, structure and function

#### Unit 3: Biogeochemical cycle

Carbon cycle, Phosphor cycle, Sulphur cycle, Nitrogen cycle

### Module II

15 hrs

#### Unit 1: Environmental Pollution

Definition, Types of pollution: Causes, effects and control measures of: Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution and Radioactive pollution

#### Unit 2: Environmental impact assessment

Need for EIA, EIA cycle and procedures, EIA report, Components of EIA

#### Unit 3: Environmental Acts and regulations

Environment Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act

### Module III

12 hrs

#### Unit 1: Solid waste management

Source and type, key components, Disposal of solid waste-onsite disposal: communal pit disposal, family pit disposal, communal bins, family bins, communal disposal without bins: Offsite disposal- Land fill- process within a land fill, Incineration of solid waste, composting

#### Unit 2: Liquid Waste Management

Pretreatment and primary treatment –screening, sedimentation, flotation, neutralization.

Secondary treatment –aerobic (Oxidation ponds and Tricking filters) and anaerobic waste water treatment process, activated sludge process.

Tertiary treatment-Chlorination, Ozonation,

#### Unit 3: Alternatives to waste management

Reduce, Reuse and Recycle

### Module IV

12 hrs

#### Unit 1: Green technology for Agriculture

Sustainable agriculture, integrated pest management (IPM), crop rotation,

Soil conservation, wasteland reclamation, wetland management, cover crops, Biofertilisers for nutrient management.

## **Unit 2: Green technology for Sustainable energy**

Conventional and Non-conventional sources of energy, Renewable energy-Solar energy, Biogas, Biomass/Biofuel, wind energy, geothermal energy, hydrothermal energy, wave energy, nuclear energy

### **Unit 1: Green technology for food and processing**

Organic foods, GM foods, Non-thermal food processing-High pressure processing, pulse electric field processing, oscillating magnetic field, Ultrasound technology: Concept of edible packaging and edible coatings, Active and intelligent packaging.

## **Module - V**

**18 hrs**

### **Unit 1 - Human Rights**

An Introduction to Human Rights, Meaning, concept and development –History of Human Rights-Different Generations of Human Rights- Universality of Human Rights- Basic International Human Rights Documents - UDHR, ICCPR, ICESCR.-Value dimensions of Human Rights

### **Unit 2 - Human Rights and United Nations**

Human Rights co-ordination within UN system- Role of UN secretariat- The Economic and Social Council- The Commission Human Rights-The Security Council and Human rights- The Committee on the Elimination of Racial Discrimination- The Committee on the Elimination of Discrimination Against Women- the Committee on Economic, Social and Cultural Rights- The Human Rights Committee- Critical Appraisal of UN Human Rights Regime.

### **Unit 3- Human Rights National Perspective**

Human Rights in Indian Constitution – Fundamental Rights- The Constitutional Context of Human Rights-directive Principles of State Policy and Human Rights- Human Rights of Women-children – minorities- Prisoners- Science Technology and Human Rights- National Human Rights Commission- State Human Rights Commission- Human Rights Awareness in Education.

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