

# **Department of Environment Science**

## **Cross Cutting Issues**

### **ABILITY ENHANCEMENT COMPULSORY COURSE**

**Course Name: ENVIRONMENT SCIENCE**

**COURSE code : ENVS2AECC02**

#### **Environmental Conservation and Ecosystem Protection**

- Introduction to environmental studies.
- Ecosystems: Multidisciplinary nature of environmental studies.
- Scope and importance.
- Structure and function of ecosystem.
- Energy flow in an ecosystem, food chains, food webs.
- Ecological succession, Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems.
- Levels of biological diversity: genetic, species, and ecosystem diversity.
- Biogeographic zones of India.
- Biodiversity patterns and global biodiversity hotspots.
- India as a mega-biodiversity nation.
- Endangered and endemic species of India.
- Threats to biodiversity, Habitat loss, Biological invasion.
- Conservation of biodiversity.
- In-situ and Ex-situ conservation of biodiversity.

- Concept of sustainability and sustainable development.

## **Natural Resource Management and Conservation**

- Natural Resources and its management and conservation.
- Land resources and land use change.
- Land degradation, soil erosion, and desertification.
- Deforestation: Causes and impacts.
- Water: Use and over-exploitation of surface and groundwater.
- Floods, droughts.
- Conflicts over water (international & inter-state).
- Energy resources: Renewable and non-renewable energy sources.
- Use of alternative energy sources.
- Growing energy needs, case studies.

## **Global Issues and Environmental Policies**

- Environmental Pollution and Management.
- Environmental pollution: types, causes, effects, and controls.
- Air, water, soil, and noise pollution.
- Solid waste management: Control measures of Urban and Industrial waste.
- 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 and control of Pollution) Act.
- Wildlife Protection Act, Forest Conservation Act.

- International agreements: Montreal and Kyoto protocols.
- Convention on Biological Diversity (CBD).

### **Social and Human Rights Issues**

- Nature reserves, tribal populations, and rights.
- Human wildlife conflicts in Indian context.
- Human population growth and its impacts on environment, human health, and welfare.
- Resettlement and rehabilitation of project-affected persons; case studies.
- Disaster management: floods, earthquakes, cyclones, and landslides.
- Environmental movements: Chipko, Silent Valley, Bishnoi's of Rajasthan.

### **Environmental Ethics**

- Environmental ethics in environmental conservation.

### **Social Intrusions and Health Concerns**

- Dangers and ill effects of Drug Consumption.
- Introduction - Definition of addiction.
- Addict and Mode of action of drugs on body organs.
- Types of Drugs, Examples and their harmful effects.
- Reasons for drug addiction.
- Ill effects of drug addiction.
- Rehabilitation of Drug Addicts.