

## **Learning Outcomes of Environmental Studies**

### **ABILITY ENHANCEMENT COMPULSORY COURSE (AECC-II) under CBCS**

#### **UNIT I: UNDERSTANDING ENVIRONMENTAL**

##### **Course Content:**

1. Environment: Concepts and importance;
2. Component of environment: Physical, biological and social;
3. Eco-system definition, structure and function: producers, consumers and decomposers, food chains, food webs and ecological pyramids, energy flow in an ecosystem;
4. Eco-system services: ecological, economic, social, aesthetic and informational value.

##### **Learning Outcomes**

- The student should have understanding of the environment and the role of human beings in shaping the environment.
- Understand various components of the environment and interfaces.
- Ability to understand the ecosystem and its various component and functions.
- Knowledge on ecology, and ecological dynamics.
- Ability to understand the various ecosystem services and their role in sustaining the environment.

#### **UNIT II: NATURAL RESOURCES**

##### **Course Content:**

- Land resources: global land use patterns, concept land degradation and desertification;
- Forest resources: use and consequences of over-exploitation;
- Water resources: use and consequences of over-utilization, concept of water harvesting and water shed management, water conflicts; energy resources;
- Renewable and non-renewable energy sources, growing energy needs and alternate energy sources.

##### **Learning Outcomes:**

- Knowledge of Natural Resources and their use and management.
- Should understand the impact of human action on land.
- Critically examine the issues of Land degradation and the various causes and consequences of desertification.
- Should understand the forest resource and the consequences of deforestation.
- Knowledge of water resources and consequences of their over utilization.
- Ability to understand the various features of water harvesting and water shed management.
- Should be able to make a distinction between renewable energy sources and non-renewable energy sources.
- Should be able to state how the over-consumption of fossil fuels leads to adverse impact on health and climate.

- Should be able to know the alternative sources of energy i.e. solar energy, wind energy, biomass energy etc.
- Should have knowledge of the government's energy policy.

### **UNIT III: BIO DIVERSITY AND ITS CONSERVATION**

#### **Course Content:**

1. Bio Diversity: definition, levels and values (commercial, ecological, social and aesthetic);
2. Threats to bio diversity: habitat loss, poaching of wild life, man-wildlife conflicts, biological invasions;
3. Concept of endemism and hot-spots of bio-diversity;
4. Conservation of Bio-diversity: In-Situ and Ex-Situ concepts.

#### **Learning Outcomes:**

- Ability to understand the biodiversity and its vital role in the functioning of ecosystem.
- Knowledge of various biodiversity levels and values thereof.
- Should understand various threats to the biodiversity.
- Understand the hot spot of biodiversity and their importance.
- Escalate the need of biodiversity conservation in the context of various developmental pathways and policy framework that the mankind has been undergoing.
- Critically examine biodiversity and human linkages, and help policy formulating for biodiversity conservation.
- Should state the various in-situ and ex-situ methods of biodiversity conservation.

### **UNIT IV: ENVIRONMENTAL ISSUES, POLICIES AND PRACTICES**

#### **Course Content:**

1. Causes, effects and control measures of: air, water, soil, noise and solid waste pollution;
2. Concept of natural disasters and global environmental issues: increase in greenhouse gases, climate change, acid rain and stratospheric ozone layer depletion;
3. salient features of: water (prevention and control of pollution) Act, 1974, air (prevention and control of pollution) Act, 1981, environment protection Act, 1986;
4. Environmental education, environmental movements (Chipko, silent valley) and environmental ethics.

#### **Learning Outcomes:**

- Should have Knowledge on the various types of environmental pollution.
- Indebtedness of the effect of various pollutions on human health and other living organisms and on the physical environment.
- Critical ability to link cause and effect of pollution.
- Critical issues of handling pollution vis a vis human beings.
- Ability to develop pollution mitigation strategies.
- Understand the different types of natural hazards, their major driving forces and their causes.

- Should have knowledge of various global environmental issues and their causes and consequences.
- Understand the various Indian constitutional provisions with respect to the environmental protection and fundamental rights.
- Should have comprehensive understanding of pollution control laws (The Water Act-1974, The Air Act-1981 and the Environment (Protection) Act of 1986), and rules.
- Ability to understand the need to address current environmental issues
- Ability to draw conclusions from various environmental movements, environmental legislations in saving the environment.