

**Value Added Courses Common for All**  
**COURSE TITLE: ENVIRONMENTAL STUDIES**  
**COURSE CODE: ACS/ 106/ VAC-1**  
**Credit- 04**

**Marks: 50 (10 + 40)**

**Unit 1: Introduction to Environmental Studies**

- Multidisciplinary nature of environmental studies
- Definition, Nature, Scope and Importance of environmental studies
- Types and Components of environment
- Sustainable development

**Unit 2: Ecosystems**

- Concept of Ecology and Eco-system, Structure and Function of an Ecosystem
- Different types of ecosystem; Forest, Desert and Aquatic (Ponds and Oceans) Biomes
- Energy flow in the ecosystem, energy flow models
- Food chains, food webs and ecological pyramids
- Ecological Succession

**Unit 3: Natural Resources: Renewable and Non- Renewable Resources**

- Land resources: Land degradation, Landslides, Soil erosion
- Forest resources: Uses, types and importance, deforestation and its effects, Forest biodiversity and tribal population
- Water resources: Distribution of water on Earth; Use and over-exploitation of surface and groundwater; conflicts over water
- Energy resources: Renewable and Non-renewable energy sources; Use of alternative energy Sources

**Unit 4: Biodiversity and conservation**

- Introduction – Definition: Levels of biological diversity: Genetics, Species and Eco-System Diversity, Biodiversity hot spots and mega biodiversity countries.
- Threats to biodiversity; Value (services) of biodiversity; man-wildlife conflicts, biological invasions
- Conservation of biodiversity: In situ and Ex situ conservation of biodiversity; Endangered and endemic species of India

**Unit 5: Environmental Pollution**

- Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks.
- Solid waste management: Control measures of urban and industrial waste
- Fireworks Pollution and thermal pollution.

**Unit 6: Environmental Policies and Environment Laws**

- Climate change, global warming, ozone layer depletion, acid rain and its impacts on human communities and agriculture
- Environment Laws: Environment Protection Act, 1986; Air (Prevention, Practices & Control of Pollution) Act, 1981; Water (Prevention and control of Pollution) Act, 1972; Wildlife Protection Act, 1972, Forest Conservation Act, 1920, 1988; International agreements: Montreal protocols, 1987 and Kyoto protocols, 1997 and Convention on Biological Diversity (CBD)
- Tribal populations in India and rights.

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

- Human population growth: Population Explosion, Impacts on environment, human health and welfare
- Disaster management: floods, earthquake, cyclones and landslides
- Environmental movements: Chipko, Silent valley
- Environmental ethics: Role of Indian and other religions and cultures in environmental Conservation
- Environment and human health: Concept of health and diseases (Vector Borne Diseases)
- Human Rights, Value Education, Role of Information Technology in Environment

**Unit 8: Field Work (Project Work)**

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural
- Study of common plants, insects, birds and basic principles of identification
- Study of simple ecosystems-pond, river etc