

ENVIRONMENTAL STUDIES – I**Unit 1 : Introduction to environmental studies**

- ☐ Multidisciplinary nature of environmental studies;
- ☐ Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems

- ☐ What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
 - a) Forest ecosystem
 - b) Grassland ecosystem
 - c) Desert ecosystem
 - d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

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

- ☐ Land resources and land use change; Land degradation, soil erosion and desertification.
- ☐ Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- ☐ Water : Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- ☐ Energy resources : Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation

- ☐ Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- ☐ India as a mega-biodiversity nation; Endangered and endemic species of India
- ☐ Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- ☐ Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.