

SEMESTER: III
Course code : U18UCC301TB1

Hours : 2
Credit : 2

UGC-CP-ENVIRONMENTAL STUDIES

Unit – I

Multidisciplinary Nature of Environmental Studies: Definition, scope and importance. Need for public awareness

Unit – II

Natural Resources:

Renewable and Non-renewable Resources: Natural resources and associated problems.

- a) Forest Resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people.
- b) Water Resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
- c) Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
- d) Food Resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
- e) Energy Resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies.
- f) Land Resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Unit – III

Ecosystems: 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. • Introduction, types, characteristic features, structure and function of the following ecosystem :- a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit – IV

Biodiversity and its conservation:

Introduction – Definition: genetic, species and ecosystem diversity.

Biogeographical classification of India • Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values • Biodiversity at global, National and local levels. • India as a mega- diversity nation. Hot-spots of biodiversity. • Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. • Endangered and endemic species of India • Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity

Unit – V

Environmental Pollution:

Definition, Cause, effects and control measures of:- a. Air pollution b. Water pollution c. Soil pollution d. Marine pollution e. Noise pollution f. Thermal pollution g. Nuclear hazards Solid waste Management : Causes, effects and control measures of urban and industrial wastes. • Role of an individual in prevention of pollution. • Pollution case studies. • Disaster management: floods, earthquake, cyclone and landslides.

Unit – VI

Social Issues and the Environment:

• From Unsustainable to Sustainable development. • Urban problems related to energy. • Water conservation, rain water harvesting, watershed management • Resettlement and rehabilitation of people; its problems and concerns. Case Studies • Environmental ethics: Issues and possible solutions. • Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies. • Wasteland reclamation. • Consumerism and waste products. • Environment Protection Act. • Air (Prevention and Control of Pollution) Act • Water (Prevention and control of Pollution) Act • Wildlife Protection Act • Forest Conservation Act • Issues involved in enforcement of environmental legislation. • Public awareness.

Unit – VII

Human Population and the Environment:

• Population growth, variation among nations. • Population explosion – Family Welfare Programme. Environment and human health. • Human Rights. • Value Education. • HIV/AIDS. • Women and Child Welfare. • Role of Information Technology in Environment and human health. • Case Studies.

Unit – VIII

Field work:

Visit to a local polluted site-Urban/Rural/Industrial/Agricultural • Study of common plants, insects, birds. Study of simple ecosystem-pond, river, hill slopes, etc.

TEXT BOOK(S):

1. Rajah, G. 2005. Environmental Studies Based on UGC Syllabus, New Age International Pvt Ltd Publishers.
2. Agarwal, K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.

REFERENCE BOOK(S):

1. De A.K., Environmental Chemistry, Wiley Eastern Ltd.
2. Down to Earth, Centre for Science and Environment
3. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi.
4. Odum, E.P. 1971. Fundamentals of Ecology. W.B. Saunders Co. USA,
5. Rao M N. & Datta, A.K. 1987. Waste Water treatment. Oxford & IBH Publ. Co. Pvt. Ltd.
6. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut