II Year – I SEMESTER

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ENVIRONMENTAL STUDIES

Course Learning Objectives:

The objectives of the course is to impart

1. Overall understanding of the natural resources
2. Basic understanding of the ecosystem and its diversity
3. Acquaintance on various environmental challenges induced due to unplanned anthropogenic activities
4. An understanding of the environmental impact of developmental activities
5. Awareness on the social issues, environmental legislation and global treaties

Course Outcomes:

The student should have knowledge on

1. The natural resources and their importance for the sustenance of the life and recognise the need to conserve the natural resources
2. The concepts of the ecosystem and its function in the environment. The need for protecting the producers and consumers in various ecosystems and their role in the food web
3. The biodiversity of India and the threats to biodiversity, and conservation practices to protect the biodiversity
4. Various attributes of the pollution and their impacts and measures to reduce or control the pollution along with waste management practices
5. Social issues both rural and urban environment and the possible means to combat the challenges
6. The environmental legislations of India and the first global initiatives towards sustainable development.
7. About environmental assessment and the stages involved in EIA and the environmental audit

Syllabus:

UNIT - I

Multidisciplinary nature of Environmental Studies: Definition, Scope and Importance –Sustainability: Stockholm and Rio Summit–Global Environmental Challenges: Global warming and climate change, acid rains,

ozone layer depletion, population growth and explosion, effects. Role of information Technology in Environment and human health.

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 Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems.

UNIT - II

Natural Resources: Natural resources and associated problems

Forest resources – Use and over – exploitation, deforestation – Timber extraction – Mining, dams and other effects on forest and tribal people.

Water resources – Use and over utilization of surface and ground water – Floods, drought, conflicts over water, dams – benefits and problems.

Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.

Food resources: World food problems, changes caused by non-agriculture activities-effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity.

Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources.

Land resources: Land as a resource, land degradation, Wasteland reclamation, 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

Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity- classification - Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. India as a mega-diversity nation - Hot-sports of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts. - Endangered and endemic species of India – Conservation of biodiversity: conservation of biodiversity.

UNIT - IV

Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear

hazards. Role of an individual in prevention of pollution. - Pollution case studies.

Solid Waste Management: Sources, classification, effects and control measures of urban and industrial solid wastes. Consumerism and waste products.

UNIT - V

Social Issues and the Environment: Urban problems related to energy - Water conservation, rain water harvesting-Resettlement and rehabilitation of people; its problems and concerns. Environmental ethics: Issues and possible solutions. Environmental 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 - VI

Environmental Management: Impact Assessment and its significance various stages of EIA, preparation of EMP and EIS, Environmental audit. Ecotourism.

The student should submit a report individually on any issues related to Environmental Studies course and make a power point presentation.

Text Books:

1. Environmental Studies by R. Rajagopalan, 2nd Edition, 2011, Oxford University Press.
2. A Textbook of Environmental Studies by Shaashi Chawla, TMH, New Delhi.
3. Environmental Studies by P.N. Palanisamy, P. Manikandan, A. Geetha, and K. Manjula Rani; Pearson Education, Chennai.

Reference:

1. Text Book of Environmental Studies by Deeshita Dave & P. Udaya Bhaskar, Cengage Learning.
2. Environmental Studies by K.V.S.G. Murali Krishna, VGS Publishers, Vijayawada.
3. Environmental Studies by Benny Joseph, Tata McGraw Hill Co, New Delhi.
4. Environmental Studies by Piyush Malaviya, Pratibha Singh, Anoop singh: Acme Learning, New Delhi.

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