I Year-I Semester		L	T	P	C
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ENVIRONMENTAL STUDIES (R161108)

Prerequisite Course:

General Science

Course Learning Objectives:

The objectives of the course is to impart

Awareness on the social issues, environmental legislation and global treaties.

Upon completion of the course, the student will be able to achieve the following outcomes.

CO	Course Outcomes	POs
1	To understand natural resources and their importance for the sustenance of the life and evaluate the need to conserve the natural resources.	5
2	Understanding and application of ecosystem concept and its function in the environment. The need for protecting the producers and consumers in various ecosystems and examine their role in the food web and solving problem.	5
3	To know the knowledge about biodiversity of India and identify the threats to biodiversity, and evaluate conservation practices to protect the biodiversity.	6
4	Demonstrate Various attributes of pollution their impacts and examine the measures to reduce or control the pollution along with validating the waste management practices.	6
5	Understanding and analyzing of Social issues both rural and urban environment and evaluate possible means to combat the challenges.	4
6	Demonstrate the environmental legislations of India and the first global initiatives towards sustainable development. About environmental assessment and stages involved in EIA and adapt environmental audit	8

Syllabus:

UNIT – I Multidisciplinary nature of Environmental Studies

Objectives: Overall understanding of the natural resources, Basic understanding of the ecosystem and its diversity

Definition, Scope and Importance –Sustainability: Stockholm and Rio Summit–Global Environmental Challenges: Global warming and climate change, Carbon Credits, 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.

Objectives: The natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources.

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, Sustainable mining of Granite, Literate, Coal, Sea and River sands.

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 Vs Oil and Natural Gas Extraction.

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

Objectives: 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 the biodiversity of India and the threats to biodiversity, and conservation practices to protect the biodiversity

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-spots 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

Objectives: Acquaintance on various environmental challenges induced due to unplanned anthropogenic activities. An understanding of the environmental impact of developmental activities.

Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, and nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies. Impact of Fire Crackers on Men and his well being.

Solid Waste Management: Sources, Classification, effects and control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e– Waste management.

UNIT – V Social Issues and the Environment

Objectives: Awareness on the social issues, environmental legislation and global treaties

: 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

Objectives: About environmental assessment and the stages involved in EIA and the environmental audit.

Impact Assessment and its significance various stages of EIA, preparation of EMP and EIS, Environmental audit. Ecotourism, Green Campus – Green business and Green politics.

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

Text Books:

1. Environmental Studies, K. V. S. G. Murali Krishna, VGS Publishers, Vijayawada
2. Environmental Studies, R. Rajagopalan, 2nd Edition, 2011, Oxford University Press.
3. Environmental Studies, P. N. Palanisamy, P. Manikandan, A. Geetha, and K. Manjula Rani; Pearson Education, Chennai

Reference:

1. Text Book of Environmental Studies, Deeshita Dave & P. Udaya Bhaskar, Cengage Learning.
2. A Textbook of Environmental Studies, Shaashi Chawla, TMH, New Delhi
3. Environmental Studies, Benny Joseph, Tata McGraw Hill Co, New Delhi
4. Perspectives in Environment Studies, Anubha Kaushik, C P Kaushik, New Age International Publishers, 2014