|  |  |  |  |
| --- | --- | --- | --- |
| **B. TECH 1st SEMESTER** | **T** | **P** | **C** |
| **3** | **-** | **3** |
| **ENVIRONMENTAL STUDIES** | | | |

**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.

**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 life styles**.

**UNIT – III: Ecosystem, Biodiversity and its conservation**

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. 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**

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**

Population growth and explosion, effects. Urban problems related to energy -Water conservation, rain water harvesting-Resettlement and rehabilitation of people; its problems and concerns. Role of information Technology in Environment and human health. Environmental Protection Act - Air (Prevention and Control of Pollution) Act. –Water (Prevention and control of Pollution) Act -Wildlife Protection Act - Forest Conservation Act – Motor Vehicle Act - Issues involved in enforcement of environmental legislation -Public awareness.

**UNIT – VI: Environmental Management**

Environmental ethics - Issues and possible solutions and Environmental Education - 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 – Field work: visit to an industrial area/ecosystem area (Forest, Grassland, Desert, and Aquatic)

**Text Book:**

1. Environmental Studies by K. V. S. G. Murali Krishna, VGS Publishers, Vijayawada
2. A text book of Environmental Studies by C. P. Kaushik & Anubha Kaushik, New Age International Publishers.

**Reference:**

1. Text Book of Environmental Studies by Deeshita Dave & P. Udaya Bhaskar, Cengage Learning.
2. A text book of Environmental Studies by Shaashi Chawla, TMH, New Delhi.