



Sub Committee for Curriculum Development
Sustainability Studies & Infrastructure Management

Format to submit syllabus

Course Name: Core Environmental Studies

Course Code: T2484

(UG/PG): UG

Number of Credits: 04

Level: 02

Learning Objective(s):

- 1. This course will reinforce and expand on student knowledge of both physical and life science by applying them to environmental concepts.**
- 2. It will provide another option for students interested in studying science.**
- 3. It also helps to create environmental awareness among the students by protecting and conserving the environment.**
- 4. This can make a student a globally responsible citizen.**

Pedagogy:

- 1. Class room teaching**
- 2. PPT presentations , Documentaries and Videos**
- 3. Field Visit and study of local issues.**

Pre-learning:

12th with Environment Science as one of the subject

Course Outline

S.No.	Topic	Hours
1	<p>The Multidisciplinary Nature of Environmental Studies Definition, scope and importance Need for public awareness</p> <p>Natural Resources Renewable and non-renewable resources Natural Resources and associated problems Forest Resources: Use and over-exploitation, deforestation, case studies, Timber extraction, mining, dams and their effects on forests 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, case studies. Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies. 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</p>	15
2	<p>Ecosystems Concept of an ecosystem Structure and function of an eco-system Producers, consumers and de-composers 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:- Forest ecosystem Grassland ecosystem Desert ecosystem Aquatic ecosystem (Ponds, streams, lakes, rivers, oceans, estuaries)</p> <p>Bio-diversity and its conservation Introduction – Genetic, species and eco-system diversity Biographical classification of India Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values. Bio-diversity at global, national and local levels India as a mega-diversity nation Hot-spots of bio-diversity Threats to bio-diversity: Habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India Conservation of bio-diversity: In situ and Ex-situ conservation of bio-diversity.</p>	15

3	<p>Environmental Pollution Définition, Causes, effects and control measures of: - Air Pollution, Water Pollution, Soil Pollution, Marine Pollution, Noise Pollution Thermal Pollution Nuclear Hazards Solid Waste Management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in preventive of pollution Pollution case studies Disaster management: Floods, earthquake, cyclone and landslides</p> <p>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 & Control of Pollution) Act Water (Prevention & Control of Pollution) Act Wildlife Protection Act Forest Conservation Act Issues involved in enforcement of environmental legislation Public awareness</p>	15
4	<p>Human Population and the Environment Population growth, variation among Nations Population explosion – Family Welfare program Environment and human health Human Rights Value Education HIV/AIDS Women & Child Welfare Role of Information Technology in Environment and Human health Case Studies</p> <p>Field Work Visit to a local area to document environmental assets- river/forest/grassland/hill/mountain Visit to a local polluted site – Urban/Rural/Industrial/Agricultural Study of common plants, insects, birds Study of simple eco-systems – ponds, river, hill slopes, etc</p>	15

Books Recommended

1. **Perspectives in Environmental Studies** by Kaushik and Kaushik (2011) New Age International, Publications, New Delhi
2. **A Text Book of Environmental Science** by Arwin Kumar (2010) APH Publishing Corporation, New Delhi
3. **Environmental Studies Basic Concepts** by V K Ahuwallia (2013) Published by TERI (The Energy & Resources Institute) Darbari Seth Block Habitate Place Lodhi Road, New Delhi- 11 0003, India.

Students are also requested to refer and go through following Monthly and Fortnightly Terra Green by TERI, National Geographic, Down to Earth by Centre for Science and Environment.

Suggested Evaluation Methods:

Class Test, Study Tour, Report Writing, Viva & Presentation.

Parallel/Similar courses the existing curriculum:

S.No.	Name of the course	Institute where it was offered

Name of Member	Dr.Pisolkar Yogesh				
Designation	Assistant Professor				
Org. / Inst.	SCMS,Pune				
Signature					

Name of the Expert:

Signature:

Date: