MC2	ENVIRONMENTAL SCIENCE	L	T	P	C	Int	Ext
		2	-	-	0.0	100	-

Semester III [Second Year]

COURSE OBJECTIVES:

To understand the management of natural resources, prevent/control pollution and work towards sustainable development for a better world in the light of growing advanced technologies.

COURSE OUTCOMES:

After successful completion of the course, the students are able to

1. understand various factors that cause natural resource degradation.
2. conserve ecosystems and biodiversity.
3. realize and explore the problems related to environmental pollution and its management.
4. apply the information and technology to analyze social issues, use acts associated with environment.

UNIT I [CO:1] **(8)**

Multidisciplinary Nature of Environmental Studies: Definition, Scope and Importance. Natural Resources: Renewable and non- renewable resources - Forest resources - Use and over - exploitation, deforestation - 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 - Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity.

UNIT II [CO:2] **(8)**

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.

Biodiversity and Its Conservation: Introduction Definition: genetic, species and ecosystem diversity - Value of biodiversity: consumptive use, Productive use, social, ethical, aesthetic and option values. 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 III [CO:3] **(8)**

Environmental Pollution: Definition, Cause, effects and control measures of : Air Pollution - Water pollution - soil pollution - Marine pollution - Noise pollution - Thermal pollution.

Solid Waste Management: Causes, effects and control measures of urban and industrial wastes - Role of an individual in prevention of pollution.

Disaster management: floods, earthquake, cyclone and landslides.

UNIT IV [CO:4] **(8)**

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.

Environmental ethics: Issues and possible solutions - Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Environment Protection Act - Air (Prevention and Control of Pollution) Act - Water (Prevention and control of Pollution) Act - Wild life Protection Act - Forest Conservation Act.

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, and birds - river, hill slopes, etc.

LEARNING RESOURCES:

TEXT BOOK(s):

1. Anubha Kaushik, C. P. Kaushik, Perspectives In Environmental Studies, 7th Edition, New Age International Private Limited.
2. Erach Bharucha. 2004, Environmental Studies for undergraduate courses, University Grants Commission, New Delhi, Bharati Vidyapeeth Institute of Environment Education and Research.
3. Palaniswamy, Environmental Studies, Pearson education.
4. S.Azeem Unnisa, Ã¢â‚¬Å“Environmental StudiesÃ¢â‚¬Â• Academic Publishing Company.
5. K.Raghavan Nambiar, Ã¢â‚¬Å“Text book of Environmental Studies for Undergraduate Courses as per UGC model syllabusÃ¢â‚¬Â•, Scitech Publications (India), Pvt. Ltd.

REFERENCE BOOK(s):

1. Anjireddy.M Environmental science & Technology, BS Publications PVT Ltd, Hyderabad.
2. Benny Joseph, 2005, Environmental Studies, The Tata McGraw- Hill publishing company limited, New Delhi.
3. Principles of Environmental Science. & Engg. P.Venu Gopala Rao, 2006, Prentice- Hall of India Pvt. Ltd., New Delhi.

WEB RESOURCES:

NPTEL Courses-Environmental Studies by Dr. Tushar Banerjee, Devi Ahilya Viswavidyalaya, Indore.