

University of Mumbai			
Class: T.E.	Branch: Computer Engineering	Semester: V	
Subject: Environment Studies(Abbreviated as EVS)			
Periods per Week (each 60 min)	Lecture	02	
	Practical	--	
	Tutorial	01	
		Hours	Marks
Evaluation System	Theory	02	50
	Practical and Oral	--	
	Oral	---	--
	Term Work	---	25
	Total	02	75

Objectives: Objective of this course is to create environmental awareness, of variety of environmental concerns.		
Module	Contents	Hours
1	The multidisciplinary nature of environmental studies Definition, scope and importance Need for public awareness	01
2	Natural resources Renewable and non renewable resources Natural resources & associated problem <ul style="list-style-type: none"> a. Forest resources: Use and over exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people. b. Water resources: Use and over utilization of surface and ground water, floods, drought, conflicts over water, dams- benefits and problems. c. Mineral resources: use and exploitation, environmental effect of extracting and using mineral resources, case studies. d. Food resources: World food problems overgrazing, effect of modern agriculture, fertilizer pesticide problems, water logging, salinity, case studies e. Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources, case studies. f. Land resources: Land as a resource, land degradation, man included land slide, soil erosion and decertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.	04
3	<ul style="list-style-type: none"> • Ecosystem • Concept of an ecosystem • Procedures, consumers and decomposers • Energy flow in the ecosystem 	03

	<ul style="list-style-type: none"> • 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) 	
4	<p>Biodiversity and its conservation</p> <ul style="list-style-type: none"> • Introduction definition: genetic species and ecosystem diversity • Bio geographical classification of India • Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values • Bio diversity at global, national, local levels • India as a mega diversity nation • Hot spots of bio diversity • Threats to biodiversity: Habitat loss, poaching of wild life, man wildlife conflicts • Endangered and endemic specific of India • Conservation of biodiversity : In situ and ex situ conservation 	04
5	<p>Environmental Pollution Definition</p> <ul style="list-style-type: none"> • Causes, effects and control measures of <ul style="list-style-type: none"> a) Air Pollution b) Water Pollution c) Soil Pollution d) Marine Pollution e) Noise Pollution f) Thermal Pollution g) Nuclear Hazards • Solid waste management: Causes, effect and control measures of urban and industrial wastes • Role of an individual in prevention of pollution • Pollution case studies • Disaster management: floods, earthquake, cyclone and land slides 	04
6	<p>Social issues and environment</p> <ul style="list-style-type: none"> • From unsustainable to sustainable development • Urban problems related to energy • Water conservation, rain water harvesting, watershed management • Re- settlement and rehabilitation of people: its 	04

	<p>problems and concerns , case studies</p> <ul style="list-style-type: none"> • Environmental ethics: issues and possible solution • 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 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 	
7	<p>Human population and the environment</p> <ul style="list-style-type: none"> • Population growth, variation among nations • Population explosion family welfare program • Environment and human health • Human rights • Value education • HIV/AIDS • Women and child welfare • Role of information technology in environment and human health • Case studies 	04
8	<p>Understanding Existence and the co existence Interrelation and cyclicity between material order, bio order, animal order and human order Understanding the human conduct: relationship in family, justice in relationship, relationship of human with nature, human behavior, human values, nature and morality Understanding the human society Dimensions of human endeavor and objectives, interrelationship in society, mutual fulfillment and cyclicity in nature.</p>	06

Theory Examination:

1. Question paper will be comprising of total 7 questions, each of 10 marks.
2. Only 5 questions need to be solved.
3. Question number 1 will be compulsory and covering the all modules.

4. Remaining questions will be mixed in nature. (e.g.- suppose Q.2 has part (a) from, module 3 then part (b) will be from any module other than module 3.)
5. In question paper weightage of each module will be proportional to number of respective lecture hours as mentioned in the syllabus.

Term work:

Term work shall consist of minimum Five projects (PROJECTS SHALL BE DESIGNED ON THE SAME GUIDE- LINE OF BOOK) and written test.

The distribution of marks for term work shall be as follows,

Laboratory work (Tutorial/Project and Journal) : 15 marks.

Test (at least one) : 10 marks.

The final certification and acceptance of term-work ensures the satisfactory performance of laboratory work and minimum passing in the term-work.

Recommended Books:

1. Jagdish Krishnawamy , R J Ranjit Daniels, “ Environmental Studies”, Wiley India Private Ltd. New Delhi
2. Anindita Basak, Environmental Studies, Pearson
3. Deeksha Dave , “Textbook of Environmental Studies”, Cengage learning, THOMSON INDIA EDITION
4. Benny Joseph” Environmental Studies”Tata McGRW HILL
5. D. L. Manjunath, Environmental Studies, Pearson
6. R.Rajgopalan, Environmental Studies, Oxford
7. Erach Bharucha, Textbook of Environmental Studies , Universities Press/Orient BlackSwan.