Environmental Sciences

Course Code	20MC1301	**Year**	II	**Semester**	I
Course Category	MC	**Branch**	CSE	**Course Type**	Theory
Credits	0	**L-T-P**	3-0-0	**Prerequisites**	-
Continuous Internal Evaluation :	100	**Semester End Evaluation:**	-	**Total Marks:**	100

Course Outcomes		
Upon successful completion of the course, the student will be able to		
CO1	Apply advanced solutions to measure the threats and hazards in environment to link with human natural systems	**L3**
CO2	Analyze the ethical, cultural and historical interactions between man and environment.	**L4**
CO3	Analyze various environmental assets and record for better management.	**L4**
CO4	Analyze global issues to design and evaluate policies	**L4**
CO5	Apply system concepts to methodological social and environmental issues.	**L3**

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations														
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	√						√							√
CO2		√					√							√
CO3		√					√							√
CO4		√					√							√
CO5	√						√							√

Syllabus		
UNIT NO.	**Contents**	**Mapped CO**
I	**Introduction To Environment And Natural Resources** Introduction to environment: Definition scope importance need for public awareness. Natural resources: Renewable and nonrenewable resources, natural resources and associated problems. Forest resources: Uses, Reasons for over-exploitation, deforestation effects case studies. Water resources: Use and over – utilization of surface and ground water, floods, drought, conflicts over water, dams- benefits and problems. Mineral resources: Uses, environmental effects of extracting and using mineral resources, case studies. Food resources: World food problems, Impacts of overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. Energy resources: Growing energy needs, use of renewable and nonrenewable energy sources, case studies.	**CO1**
II	**Ecosystems And Biodiversity** Structure components of ecosystem: Biotic and Abiotic components. Functional components of an ecosystem: Food chains, Food webs, Ecological pyramids, Energy flow in the ecosystem, Ecological succession. Biogeochemical cycle: Nitrogen, carbon, Phosphorus cycle. Biodiversity: Definition, Levels of biodiversity: genetic, species and ecosystem diversity. Bio-geographical classification of India, Values of biodiversity: consumptive use, productive use, social, ethical, aesthetic and optional values. India as a mega – diversity nation. Hot-spots of biodiversity. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. Conservation of biodiversity: In– situ and Ex-situ conservation of biodiversity.	**CO2**
III	**Environmental Pollution And Control** Environmental Pollution: Definition, causes, effects and control measures: Air Pollution, Water pollution, Soil pollution, Marine pollution, Thermal pollution, Nuclear hazards, Solid waste Management, e-waste, Pollution case studies.	**CO3**
IV	**Social Issues And Global Environment Problems And Efforts** From Unsustainable to Sustainable development. Urban problems related to energy. Water conservation, rain water harvesting, watershed management, and Remote sensing and GIS methods. Environmental ethics: Issues and possible solutions. Green building concept, Environmental Impact Assessment Environmental Management Plan, Climate change: global warming, acid rain, ozone layer depletion.	**CO4**
V	**Human Population And Environment Legislation** Population growth, Environment and human health. HIV/AIDS, Value Education. Women and Child Welfare. Role of Information Technology in Environment and human health. Environment Legislation. Air (Prevention and Control of Pollution) Act. Water (Prevention and Control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act. Environmental Protection Act.	**CO5**

Learning Resources
Text Books
1. Environmental studies, Anubha Kaushik and C.P. Kaushik, 2014, New Age International Publishers. 2. Text book of environmental studies for undergraduates courses, Erach Barucha, University Grants Commission, 2005, University Press. 3. Environmental Studies, Anindita Basak, 2009, Pearson.
Reference Books
1. A Text book of Environmental Studies, D.K. Asthana and Meera Asthana, 2010, S. Chand. 2. Solid and Hazardous waste Management, P.M Cherry, 2016, CBS Publisher. 3. Environmental Impact Assessment, Charles H. Ecclestion, 2011, CRC Press.