

Branch Name:	Civil Engineering Artificial Intelligence & Machine Learning (AI/ML)
Program Code:	ET401, ET409
Course Name:	Environmental Science
Course Code:	2ET4000102
Pre-requisite Course:	--

COURSE OBJECTIVE:

To sum up, the objectives of environmental studies are to develop a world in which persons are aware of and concerned about environment and the problems associated with it, and committed to work individually as well as collectively towards solutions of current problems and prevention of future problems.

1. Solve various engineering problems applying ecosystem to produce eco – friendly products.
2. Use relevant air and noise control method to solve domestic and industrial problems.
3. Use relevant water and soil control method to solve domestic and industrial problems.
4. To recognize relevant energy sources required for domestic and industrial applications.
5. Solve local solid and e-waste problems.

TEACHING AND EVALUATION SCHEME:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				Total (Marks)
Lecture	Tutorial	Practical	Credit	Theory		Practical		
				University Assessment	Continuous Assessment	University Assessment	Continuous assessment	
2	-	-	2	-	50	-	-	50

DETAILS OF COURSE CONTENTS:

S. NO.	TOPIC	Total Hrs.
1	Introduction of Environment Studies: 1.1. Definition 1.2. Scope and importance 1.3. Need for public awareness.	02
2	Natural Resources: 2.1. Renewable and non-renewable resources 2.2. Forest resources:- Use and over-exploitation, deforestation, case studies and their effects on forest and tribal people 2.3. Water resources: - Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. 2.4. Food resources: - World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. Land resources: - Land as a resource, land degradation, man induced landslides, soil erosion and desertification.	04

3	Ecology And Ecosystem 3.1. Concept of an ecosystem Structure and function of an ecosystem, Producers, consumers and decomposers 3.2. Energy flow in the ecosystem, Food chains, food webs and ecological pyramids, 3.3. Introduction, types, characteristic features, structure and function of the following ecosystem: a. Forest ecosystem b. Grassland ecosystem c. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans)	04
4	Environmental Pollution: 4.1. Definition, Cause, effects and control measures of various pollution 4.2. Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards 4.3. Role of an individual in prevention of pollution.	06
5	Social Issues And The Environmental 5.1. From Unsustainable to Sustainable development 5.2. Urban problems related to energy 5.3. Water conservation, rain water harvesting, watershed management 5.4. Environmental ethics: Issues and possible solutions, Climate change, global warming, acid rain, ozone layer depletion, nuclear Accidents, Waste and reclamation Consumerism and waste products	06
6	Human population And The Environment 6.1 Indian law of Environment 6.2 Environmental legislation: History and policy 6.3 Various Act about environment, The Wildlife (Protection) Act 1972; The Air (Prevention and Control of Pollution) Act 1981; The Environment (Protection) Act 1986; The National Green Tribunal Act 2010;	06

COURSE OUTCOME:

On the completion of the course student will be able to:

1. Understand the scope and importance of environmental science.
2. To correlate the exploitation and utilization of conventional and non-conventional resources.
3. Comprehend the importance of ecosystem, biodiversity and natural bio geo chemical cycle.
4. Identify different types of environmental pollution and control measures.
5. Understand and realize the multi-disciplinary nature of the environment, its components.
6. Identify different types of environmental pollution and its management.
7. Develop the awareness about global environmental is

LIST OF REFERENCES:

1. Environmental Pollution: Causes, Effects & Control by K.C Agrawal
2. Environmental Studies by Dr.Suresh K Dhameja, Published by:S.K.Kataria& Sons New Delhi
3. Basics of Environmental Studies by Dr.N S Varandani

4. Environmental Studies by Anindita Basak, Publisher: Dring Kindersley(India)Pvt. Ltd Pearson
5. S.C. Sharma & M.P.Poonia, Environmental Studies, Khanna Publishing House, New Delhi.

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand the scope and importance of environmental science.	2 Understanding
CLO2	To correlate the exploitation and utilization of conventional and non-conventional resources.	1 Remembering
CLO3	Comprehend the importance of ecosystem, biodiversity and natural bio geo chemical cycle.	2 Understanding 1 Remembering
CLO4	Identify different types of environmental pollution and control measures.	4 Analyzing 3 Applying
CLO5	Understand and realize the multi-disciplinary nature of the environment, its components.	2 Understanding
CLO6	Identify different types of environmental pollution and its management.	2 Understanding 1 Remembering

Course Learning Outcomes	Program Outcomes(Pos)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 ₀	PO1 ₁	PO1 ₂
CLO1	H	M										L
CLO2	M			H			L					
CLO3	M					L	H					
CLO4				H		L	M					
CLO5		L		M			H					
CLO6		L		H			M					

H:High, M:Medium, L:Low



Faculty of Engineering and Technology
Diploma Engineering (Semester I)
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