

Branch Name:	Electrical Engineering
Program Code:	ET109
Course Name:	ENVIRONMENTAL STUDIES
CourseCode:	1ET1000104
Pre-requisiteCourse:	-

CourseObjective:

- To acquire basic knowledge and understand about environment and its related recent problems.
- To identify different environmental issues facing by human.
- To create awareness amongst the society.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)								
Lecture	Tutorial	Practical	Credit	Theory				Practical				Total
				University Assessment		Continuous Assessment		University Assessment		Continuous Assessment		
				Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
3	-	-	3	28	70	12	30	-	-	-	-	100

CourseContents

Sr. No	Topic	Total Hours	Weight (%)
1	Introduction of Environment Definition and Components of Environment, Relationship between the different components of Environment, Impact of technology on Environment, Environmental Degradation and Importance of Environmental issues in current scenario.	04	8
2	Ecology and Ecosystem Introduction: Ecology - Objectives and Classification, Concept of an ecosystem-structure and function of ecosystem Components of ecosystem- Producers, Consumers, Decomposers Bio-Geo-Chemical Cycles- Hydrologic Cycle, Carbon cycle, Energy Flow in Ecosystem, Food Chains, Food webs, Ecological Pyramids Major Ecosystems: Forest Ecosystem, Grassland Ecosystem, Desert Ecosystem, Aquatic Ecosystem, Estuarine Ecosystem.	08	15
3	Natural Resources (a) Renewable and Nonrenewable resources, exploitation and conservation, Role of individual in conservation of natural resources. (b) Water resources: Water sources- Surface and Ground Water Sources, Indian and Global scenario. (c) Land as a resource, social issues (d) Forest resources: Definition and Classification of Forests Ecological and Economic importance and benefits of forest, Indian scenario, Deforestation: causes and effects, remedial measures. (e) Energy resources: Conventional and Non-conventional sources of energy, Advantages and Limitations, Utilization, Exploitation and related Environmental problems.	07	20

4	Human Population and Environmental Degradation Population Growth, World and Indian scenario, Population and Environmental Degradation, Malthusian theory, Optimum theory, Population explosion – Causes, Effects and Control.	06	16
5	Environmental pollution Types of Environmental Pollution: (a) Water Pollution: Introduction – Water Quality Standards, Sources of Water Pollution: Industrial, Agricultural, Municipal; Classification of water pollutants, Effects of water pollutants, Eutrophication. (b) Air Pollution: Composition of air, Structure of atmosphere, Ambient Air Quality Standards, Classification of air pollutants, Sources of common air pollutants like PM, SO ₂ , NO _x , Natural & Anthropogenic Sources, Effects of common air pollutants (c) Land Pollution: Land uses, Land degradation: causes, effects and control, soil erosion (d) Noise Pollution: Introduction, Sound and Noise, Noise measurements, Causes and Effects (e) Thermal Pollution: Causes and effects (f) Role of individual in the prevention of pollution	10	26
6	Global Environmental Issues and Legislation Global Environmental Issues: Climate Change, Global Warming and Green House Effect, Acid Rain, Depletion of Ozone layer. Environmental Acts: Water, land, air and forest. Environmental awareness and ethics.	07	15

Text Books:

1. Environmental Studies: R. Rajagopalan, Oxford University Press.
2. Environmental Pollution: Causes, Effects & Control by K. C. Agrawal.
3. Environmental Sciences by Daniel B. Botkin & Edward A. Keller Publisher: John Wiley & Sons.
4. Environmental Studies by Dr. Suresh K. Dhameja, Published by: SK Kataria & Sons New Delhi.

Reference Books:

1. Basics of Environmental Studies by Dr. N. S. Varandani, Publisher: LAP-Lambert Academic Publishing, Germany.
2. Textbook of Environmental Studies for Undergraduate Courses by Erach Bharucha Second edition, 2013 Publisher: Universities Press (India) Private Ltd, Hyderabad.
3. Environmental Studies by Anindita Basak, Publisher: Dr. Ling Kindersley (India) Pvt. Ltd Pearson.
4. Textbook of Environmental Studies by Deeksha Dave & S. S. Kateva, Cengage Publishers.

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

CLO	Description	Bloom's Taxonomy Level
CLO1	To acquire basic knowledge and understand about environment and its related recent problems.	2- Understanding
CLO2	To identify different environmental issues facing by human.	2- Understanding
CLO3	To create awareness amongst the society.	2- Understanding

Mapping of CLOs with POs & PSOs

	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
Course Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CLO1	M	M				M	M							M	
CLO2	M	M				M	M							M	
CLO3	M	M				M	M							M	

H:High, M:Medium, L:Low