

Subject Code: 1ET4000102	Subject Title: Environmental Science
Pre-Requisite	----

RATIONALE:

Technicians working in industries or elsewhere essentially require the knowledge of environmental science so as to enable them to work and produce most efficient, economical and eco-friendly finished products. Master core concepts and methods from ecological and physical science and their applications in environmental problem solving. Appreciate the ethical, cross-cultural, and historical context of environmental issues and the links between human and natural systems.

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	-	-	-	-	-	-	-	--

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. 2.5. 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. Population growth, variation among nations. 6.2. Population explosion – Family Welfare Programme 6.3. Environment and human health. 6.4. Human Rights. 6.5. Value Education. 6.6. Women and Child Welfare. 6.7. Role of Information Technology in Environment and human health.	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 issues.

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: Drling Kindersley(India)Pvt. Ltd Pearson
5. S.C. Sharma & M.P.Poonia, Environmental Studies, Khanna Publishing House,NewDelhi.