C. U. SHAH UNIVERSITY WADHWAN CITY

Faculty of : Arts & Humanities
Department of : English
Course : B. A. (Common for All)
Semester : II
Name of Subject : **Environmental Science**
Subject Code : 4AH02ENS3

TEACHING & EVALUATION SCHEME

Subject Code	Name of the Subject	Teaching Scheme (Hours)				Evaluation Scheme								
						Theory					Practical (Marks)			
		Th	Tu	P	Total	Sessional Exam		University Exam		Total	Pr/ Viva	TW	Total	Total
						Marks	Hrs	Marks	Hrs					
4AH02ENS3	**Environmental Science**	2	2	0	4	30	1.5	70	3	100	30	20	50	150

Objectives:

This course on the environment is unlike any other. It is not only a collection of facts or information about the environment. It is about the way we all should live. It is expected to give you information about the environment that will lead to a concern for your own environment. When you develop this concern, you will begin to act at your own level to protect the environment we all live in. This is the objective of the course and the syllabus is a framework on which we must all realign our lives.

Pre-requisites:

- Students should have basic knowledge of environment and its importance in human life.
- Students should have interest and willingness to study environment science and its usefulness in life.

Prescribed Text:

Textbook for Environmental Studies for Undergraduate Courses of all Branches of Higher Education Erach Bharucha for University Grants Commission

Course Outline:

Unit No.	Course Content (Title of the Unit)	Minimum No. of Hours
0	**Prerequisites**	**02**
1	**Unit 1: Multidisciplinary nature of environmental studies** • Definition, scope and importance • Need for public awareness.	**02**
2	**Unit 2 : Natural Resources :** **Renewable and non-renewable resources :** Natural resources and associated problems. a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest 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 effects of extracting and using mineral resources, case studies. d) Food resources : World food problems, changes caused by agriculture and overgrazing, effects 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 induced landslides, soil erosion and desertification. • Role of an individual in conservation of natural resources. • Equitable use of resources for sustainable lifestyles.	**08**
3	**Unit 3 : Ecosystems** • Concept of an ecosystem. • Structure and function of an ecosystem. • Producers, consumers and decomposers. • Energy flow in the ecosystem. • Ecological succession. • Food chains, food webs and ecological pyramids. • Introduction, types, characteristic features, structure and function of the following ecosystem :-	**06**

	i) Forest ecosystem ii) Grassland ecosystem iii) Desert ecosystem iv) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)	
4	**Unit 4 : Environmental Pollution** • Definition • Cause, effects and control measures of :- 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, effects 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 landslides.	**08**
5	**Unit 5 : Social Issues and the Environment** • From Unsustainable to Sustainable development • Urban problems related to energy • Water conservation, rain water harvesting, watershed management • Resettlement and rehabilitation of people; its problems and concerns. Case Studies • Environmental ethics : Issues and possible solutions. • 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.	**08**
6	**Unit 6 : Human Population and the Environment** • Population growth, variation among nations. • Population explosion – Family Welfare Programme • Environment and human health	**06**

	• Human Rights. • Value Education • HIV/AIDS • Women and Child Welfare • Role of Information Technology in Environment and human health • Case Studies	
7	**Field work:** • Visit to a local area to document environmental assets-river/forest/grassland/hill/mountain • Visit to a local polluted site-Urban/Rural/Industrial/Agricultural • Study of common plants, insects, birds • Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours)	**20**
Total Hours:		**60**

- **Learning Outcomes:-**
- The course provides knowledge regarding conservation of environment which is very crucial in the present day scenario.
- **Books Recommended:**

1. 'Introduction to Environmental Engineering and Science', Masters, G.M., Prentic–Hall of India Pvt. Ltd.
2. 'Environmental Science', Nebel, B.J. Prentice –Hall Inc.
3. 'Ecology: The Link between the natural and social sciences', Odum, E.P.,IBH Publishing Com., Delhi.
4. 'Environmental Studies', Snehal Popli, Mahajan Publication.
5. 'Environmental Studies', R. Rajagopalan, Oxford University Press.
6. 'Environmental Pollution: Causes, Effects & Control', K. C. Agrawal.

- **E-Resources:**

1. en.wikipedia.org/wiki/Environmental science
2. www.iisc.ernet.in/ug/environmentscience.htm
3. www.sciencedaily.com/gallery/earth_climate/environmental_science/
4. environment.nationalgeographic.co.in/