

Environmental Studies (Common to All Branches)

Course Category	Basic Sciences	Course Code	19BE1T01
Course Type	Theory	L-T-P-C	3 – 0 – 0 – 0
Prerequisites	Exposure to Basic Knowledge in Environment and protection.	Internal Assessment Semester End Examination Total Marks	0 0 0

COURSE OBJECTIVE:**1**

To make the students to get awareness on environment, to understand the importance of protecting natural resources, ecosystems for future generations and pollution causes due to the day to day activities of human life to save earth from the inventions by the engineers.

COURSE OUTCOMES**LEVEL****Upon successful completion of the course, the student will be able to:**

CO1	Recognize the interconnectedness of human dependence on the earth's ecosystems	K -II
CO2	Comprehend environmental problems from multiple perspectives with emphasis on human modern lifestyles and developmental activities	K -I
CO3	Demonstrate knowledge relating to the biological systems involved in the major global environmental problems of the 21st century	K -II
CO4	Gain a higher level of personal involvement and interest in understanding and solving environmental problems.	K -II
CO5	Learn the management of environmental hazards and to mitigate disasters and have a clear understanding of environmental concerns and follow sustainable development practices	K -III
CO6	Influence their society in proper utilization of goods and services.	K -I

Contribution of Course Outcomes towards achievement of Program**Outcomes (1 – Low, 2 - Medium, 3 – High)**

	PO1	PO 2	PO 3	PO4	PO 5	PO 6	PO 7	PO8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2
CO1	1	0	1	0	0	1	2	0	0	0	1	0	0	0
CO2	0	1	0	0	0	0	1	0	0	0	0	0	0	0
CO3	0	0	0	0	2	0	1	0	0	0	0	0	0	0
CO4	0	0	0	0	1	1	3	0	0	0	0	0	0	0
CO5	0	0	0	0	0	0	3	1	0	0	0	0	0	0

Course contents:**UNIT – I**

Multidisciplinary nature of Environmental Studies: Definition, Scope and Importance-Need for public awareness.

Natural Resources:

Forest resources : deforestation – Mining, dams and other effects on forest and tribal people.

Water resources :Use and over utilization of surface and groundwater.

Food resources:World food problems, effects of modern agriculture, fertilizer-pesticide problems.

Energy resources: renewable and nonrenewable energy sources.

Role of an individual in conservation of natural resources.Equitable use of resources for sustainable lifestyles.

LEARNING OUTCOMES:

Students will be able to

1. Articulate the basic structure, functions, and processes of key social systems affecting the environment
2. Explain why renewable and non-renewable energy resources are important..
3. Explain how water resources should be used.

UNIT-II;Ecosystems, Biodiversity and its conservation: Definition of Ecosystem and its structure, Functions

Biodiversity Definition-Value of biodiversity, India as a mega-diversity nation, Threats to biodiversity, Conservation of biodiversity

LEARNING OUTCOMES:

Students will be able to

1. Get a clear picture of structure and functions of ecosystems.
2. Demonstrate knowledge and understanding of theories in the field of Biodiversity and Systematic in the broad sense.

UNIT-III: Environmental Pollution: Definition, Cause, Effects of Air pollution, Water pollution, Noise pollution, Radioactive pollution, Role of an individual in prevention of pollution.

Solid Waste Management: Sources, effects and control measures of urban and industrial waste.

LEARNING OUTCOMES Students will be able to

1. Understand Cause, effects and control measures of air pollution.
2. Explain the enforcement of Environmental legislation
3. Understand solid waste management.

UNIT-IV: Social Issues and the Environment: Air (Prevention and Control of Pollution) Act 1981. –Water (Prevention and control of Pollution) Act 1974, EPA act 1986 ,Issues involved in enforcement of environmental legislation, Rain water harvesting, Global Environmental challenges climate change and mitigations and Adaptations (Engineering technologies)

LEARNING OUTCOMES:

Students will be able to

1. Explain the enforcement of Environmental legislations
2. Acquire knowledge on various environmental challenges induced due to unplanned anthropogenic activities.

UNIT-V: Human population and the Environment:

Population growth, Women and child welfare, Role of Information technology in environment and human health Awareness to Environmental Assessment & clearance , Audit .Environmental Governance in india E-Waste management Rules (Biomedical Waste, Solid Waste) **Field work:** A mini project related to Environmental issues / To visit a local polluted site (Submission of project by every student)

LEARNING OUTCOMES Students will have

1. Explain various types of information technologies
2. Explain the theories of population explosion

TEXT BOOKS	
1.	Environmental Studies for undergraduate courses by ErachBharucha, UGC.
2.	A Textbook of Environmental Studies by Dr.S.AzeemUnnisa, Academic publishing company.
3.	Environmental Studies by P.N. Palanisamy, P. Manikandan, A. Geetha, and K. Manjula Rani; Pearson Education, Chennai
4.	<u>A Textbook EIA Notification 2006(2019)</u>
REFERENCE BOOKS	
1.	Text Book of Environmental Studies by Deeshita Dave & P. UdayaBhaskar, Cengage learning.
2.	Glimpses of Environment by K.V.S.G. Murali Krishna Published by Environmental Protection Society, Kakinada, A.P.
3.	Environmental Studies by Benny Joseph, Tata McGraw Hill Co, New Delhi
WEB RESOURCES	
1.	UNIT-1: MULTI DISPLINARY NATURE OF ENVIRONMENT and NATURAL RESOURCES http://www.defra.gov.uk/environment/climatechange
2.	UNIT-2: ECOSYSTEM, BIODIVERSITY AND ITS CONSERVATION http://conbio.net/v1/ and www.biodiversitya-z.org/content/biodiversity
3.	UNIT-3: ENVIRONMENTAL POLLUTION https://www.omicsonline.org/environment-pollution-climate-change.php and
4.	UNIT-4: Social Issues and the Environment http://www.publichealthnotes.com/solid-waste-management/
5.	UNIT-5: HUMAN POPULATION AND THE ENVIRONMENT http://IPCC.com