

**HS112: ENVIRONMENTAL SCIENCE  
CREDITS - 0 (LTP:2,0,0)**

**Rationale:**

To inculcate the environmental values translating into pro-conservation actions Honorable Supreme Court of India has made it 'mandatory' to introduce a basic course on environment at the undergraduate level.

**Course Objectives:**

1. Develop awareness about various environmental pollution effects and control measures.
2. Create awareness about environmental ethics.

**Teaching and Assessment Scheme**

Teaching Scheme (Hours per week)			Credits	Assessment Scheme				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE	CE	ESE	CE		
2	0	0	0	30	20	00	00	50

**Course Content:**

Unit No.	Topics	Teaching Hours
1	<b>INTRODUCTION TO ENVIRONMENT</b> Definition, principles and scope of Environmental Science. Impacts of technology on Environment, Environmental Degradation, Importance for different engineering disciplines	02
2	<b>ENVIRONMENTAL POLLUTION</b> <b>Water Pollution:</b> Introduction – Water Quality Standards, Sources of Water Pollution, Classification of water pollutants, Effects of water pollutants  <b>Air Pollution:</b> Composition of air, Structure of atmosphere, Ambient Air Quality Standards, Classification of air pollutants, Sources of common air pollutants like PM, SO <sub>2</sub> , NOX, Auto exhaust, Effects of common air pollutants  <b>Noise Pollution:</b> Introduction, Sound and Noise, Noise measurements, Causes and Effects  <b>Solid Waste:</b> Generation and management <b>Bio-medical Waste:</b> Generation and management <b>E-waste:</b> Generation and management	12

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<b>Unit No.</b>	<b>Topics</b>	<b>Teaching Hours</b>
3	<b>GLOBAL ENVIRONMENTAL ISSUES</b> Sustainable Development, Climate Change, Global Warming and Green House Effect, Acid Rain, Depletion of Ozone layer, Carbon Footprint, Cleaner Development Mechanism (CDM), International Steps for Mitigating Global Change	07
4.	<b>SOCIAL ISSUES AND ENVIRONMENT</b> Role of an individual in prevention of environmental pollution. Environmental ethics: Issues and possible solution. Wasteland reclamation, consumerisms and waste products.	05
5	<b>CONCEPT OF 4R's</b> Principles, Application of 4R's :Reduce, Reuse, Recycle, Recovery	02
<b>Total</b>		<b>28</b>

**List of References:**

1. Bharucha Erach, "*Textbook of Environmental Studies for undergraduate courses*", 2<sup>nd</sup> Edition, Universities Press (India) Private Limited, 2013. New Delhi ISBN: 978-81-7371-862-5
2. Dr. Dhmaeja S.K., "*Environmental Studies*", 4<sup>th</sup> Edition, S. K. Kataria & Sons, New Delhi 2012.
3. Dr. Sharma J.P., "*Basics of Environmental Studies*", 1<sup>st</sup> Edition, University Science Press", New Delhi, 2009.

**Course Outcomes:**

After learning the course the students should be able to:

1. Understand the scope , guiding principles and importance of Environmental Science
2. Gain scientific perspectives of critical environmental pollution, its effects and mitigation
3. Evaluate critical role of human and develop ethical values for sustainable development of environment.
4. Inculcate the concepts of Reduce, Reuse, Recycle and recovery in all aspects