BVM ENGINEERING COLLEGE [AN AUTONOMOUS INSTITUTION]

HS102: ENVIRONMENTAL SCIENCE
CREDITS - 0 (L=2, T=2, P=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			Credits	Marks Distribution				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE	CE	ESE	CE	
2	2	0	0	35	15	30	20	100

Course Content:

Unit No.	Topics	Teaching Hours
1	**INTRODUCTION TO ENVIRONMENT** Definition, principles and scope of Environmental Science. Impacts of technology on Environment, Environmental Degradation, Importance for different engineering disciplines	02
2	**ENVIRONMENTAL POLLUTION** **Water Pollution**: Introduction – Water Quality Standards, Sources of Water Pollution, Classification of water pollutants, Effects of water pollutants **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, NOX, Auto exhaust, Effects of common air pollutants **Noise Pollution:** Introduction, Sound and Noise, Noise measurements, Causes and Effects **Solid Waste:** Generation and management **Bio-medical Waste:** Generation and management **E-waste:** Generation and management	12
3	**GLOBAL ENVIRONMENTAL** ISSUES 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

Unit No.	Topics	Teaching Hours
4.	**SOCIAL ISSUES AND ENVIRONMENT** Role of an individual in prevention of environmental pollution. Environmental ethics: Issues and possible solution. Wasteland reclamation, consumerisms and waste products.	05
5	**CONCEPT OF 4R's** Principles, Application of 4R's :Reduce, Reuse, Recycle, Recovery	02
	Total	**28**

List of References:

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