

19CE4501E – POLLUTION PREVENTION & MANAGEMENT

Course Category:	Program Elective	Credits:	3
Course Type:	Theory	Lecture-Tutorial-Practical:	3-0-0
Prerequisites:	19CE3404- Environmental Engineering 19BS1103- Chemistry of Materials	Continuous Evaluation:	30
		Semester End Evaluation:	70
		Total Marks:	100

Course Outcomes

Upon successful completion of the course, the student will be able to:

CO1	Understand the treatment and disposal methods of rural sanitation	K2
CO2	Outline the handling of biomedical waste and its disposal	K4
CO3	Assess the different characteristics of industrial wastes and their disposal methods	K2
CO4	Identify the sources of noise pollution and suggest methods for mitigating the problem.	K1
CO5	Understand the e waste generated and control measures.	K2

Contribution of Course Outcomes towards achievement of Program Outcomes

		PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3		2				2	2					1	2
CO2	3		2				2	2					1	2
CO3	3		2				2	2					1	2
CO4	3		2				2	2					1	2
CO5	2		2				2	2					1	2

1- Low

2-Medium

3-High

Course Content

UNIT-1	Rural Sanitation- Introduction to rural sanitation- Community and sanitary latrines - Planning of wastewater collection system in rural areas- Treatment and Disposal of wastewater - Compact and simple wastewater treatment units and systems in rural areas- stabilization ponds - septic tanks - soak pits- low-cost excreta disposal systems- Effluent disposal.	CO1
UNIT-2	Biomedical Waste Management- Definition-Sources-Classification of biomedical waste – Objectives of Biomedical waste management-segregation-containers for biomedical waste- Labelling Collection- Transport-Disposal methods.	CO2
UNIT-3	Industrial And Hazardous Waste Management Industrial waste types, characteristics of industrial wastes, pollution from major industries, effects of industrial effluents, treatment technologies; Hazardous wastes definition, sources of hazardous waste, transportation, treatment and disposal methods and processes	CO3
UNIT-4	Noise Pollution Sources of noise pollution, impacts of noise, measurement of noise and permissible limits of noise. Control methods of noise pollution, The Noise Pollution (Regulation and Control) Rules, 2000 as per CPCB.	CO4
UNIT-5	E-Waste management Sources- Types- components; Collection process- Segregation-Disposal methods; Effect on air, water and soil; Health hazards; Role of individual for E-waste management. Current E-waste Management Rules	CO5

Learning Resources

Text Books	<ol style="list-style-type: none"> Juuti, P., Tapio S. K., and Wuorinen H., Environmental History of Water: Global Views on Community Water Supply and Sanitation, IWA Publishing (Intl Water Assoc), 2007 Rittmann, B.E., and McCarty, P.L., Environmental Biotechnology: Principles
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	and Applications, McGraw Hill, 2001. Environmental Engineering by Mackenzie L Davis & David A Cornwell. McGraw Hill Publishing.
Reference Books	1. Reddy, L.N. and Inyang. H. I., Geoenvironmental Engineering –Principles and Applications, Marcel Dekker, Inc., New York., 2000 Industrial Wastewater Management, Treatment and Disposal, WEF Manual of practice No. FD-3, 3rd Ed., WEF Press and McGrawHill, 2008
e-Resources & other digital material	http://www.nptelvideos.in/2012/12/fundamentals-of-environmental-pollution.html