20CE4501 D–POLLUTION PREVENTION AND MANAGEMENT

Offering Branches	CE		
Course Category:	Professional Elective course	**Credits:**	3
Course Type:	Theory	**Lecture-Tutorial-Practical:**	3-0-0
Prerequisites:	20CE3501 - Environmental Engineering 20MC1301 – Environmental Science	**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	**Demonstrate** the handling of biomedical waste and its disposal	K2
CO3	**Categorize** the E-waste sources, problems, control measures and E-waste rules	K4
CO4	**Analyse** the characteristics and disposal methods for Hazardous waste	K4
CO5	**Identify** the sources of noise pollution and suggest methods for mitigating the problem.	K3

Contribution of Course Outcomes towards achievement of Program Outcomes

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2	2	2			2	2						2	2
CO2	2	2	2			2	2						2	2
CO3	3	3	3			3	3						3	3
CO4	2	2	2			3	3						2	3
CO5	2	2	2			2	2						2	2
Avg.	**2**	**2**	**2**			**2**	**2**						**2**	**2**

1- Low **2-Medium** **3-High**

Course Content

I	**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**
II	**Biomedical Waste Management**-Definition-Sources-Classification of biomedical waste – Objectives of Biomedical waste management-segregation-containers for biomedical waste-Labeling Collection- Transport-Disposal methods.	**CO2**
III	**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	**CO3**
IV	**Hazardous Waste Management:** Hazardous wastes definition, Characteristics, sources of hazardous waste, transportation, treatment and disposal methods and processes	**CO4**
V	**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.	**CO5**

Learning Resources

Text Books	1. Juuti,P., Tapio S. K. and Vuorinen H., Environmental History of Water: Global Views on Community Water Supply and Sanitation, IWA Publishing (Intl Water Assoc), 2007

	2. Rittmann, B.E., and McCarty, P.L., Environmental Biotechnology: Principles and Applications, McGraw Hill, 2001.
Reference Books	1. Reddy, L.N. and Inyang. H. I., Geoenvironmental Engineering –Principles and Applications, Marcel Dekker, Inc., New York., 2000An Introduction to Air pollution by Trivedy, R.K., B.S.Publications, 2005. 2. Environmental Engineering by Mackenzie L Davis & David A Cornwell. McGraw Hill Publishing
e- Resources & other digital material	http://www.nptelvideos.in/2012/12/fundamentals-of-environmental-pollution.html