

19CE5606E – ENVIRONMENTAL MANAGEMENT

Course Category:	Program Core											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		
Upon successful completion of the course, the student will be able to:															
Course Outcomes	CO1	Analyze the sources and composition of Municipal Solid Waste													
	CO2	Distinguish between different solid waste management methods and relate its effect on soil													
	CO3	Determine different types of Hazardous wastes and their safe disposal methods													
	CO4	Illustrate importance of EIA and its assessment methodologies													
	CO5	Assess impacts of air and water and their significance													
Contribution of Course Outcomes towards achievement of Program Outcomes		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	CO1	3	2	1		1		2	2					1	2
	CO2	3		2		2		2	2					1	2
	CO3	3		2		1		2	2					1	2
	CO4	3		1		1		2		1				1	2
	CO5	3		1		1		2		1				1	2
		1- Low				2-Medium				3-High					
Course Content															
UNIT-1	Introduction: Sources and types of municipal solid wastes-waste generation rates-factors affecting generation, characteristics-methods of sampling and characterization, segregation of solid wastes – source reduction of waste – objectives of waste processing, elements of solid waste management – municipal and bio medical solid waste rules – public role in solid waste management.												CO1.		
UNIT-2	Resource recovery from solid waste composting and biomethanation; materials- soil pollution: sources, types of soil pollution, effects of fertilizers, pesticides and radioactive material on soils, land disposal of solid waste; sanitary landfills – site selection; landfill liners – management of leachate.												CO2.		
UNIT-3	Hazardous Waste Management: Sources and types of hazardous waste characteristics of hazardous wastes; collection-handling-processing techniques-disposal methods; hospital waste management - processing techniques - disposal.												CO3		
UNIT-4	Conceptual Facts of EIA: Introduction, definition and scope of EIA objectives in EIA, basic EIA principles, classification of EIA, strategic EIA (SEIA), regional EIA, sectoral EIA, project level EIA and life cycle assessment, project cycle, Environmental baseline monitoring (EBM), preliminary study to determine impact significance, Impact Assessment Methodologies.												CO4		
UNIT-5	Prediction of Impacts (Air and Water): Air and water environment, sources and basic information on water and air conceptual approach for addressing air and water environment impacts, assessment of impacts air, water, noise, soil, biological and socioeconomic impacts, assessment of impact significance.												CO5		
Learning Resources															

Text Books	<ol style="list-style-type: none">1. Integrated Solid waste management by Goerge Tchobanolous, Hilary Theisen & Samuel A. Vigil. McGraw Hill International Editions2. Y. Anjaneyulu, Environmental Impact Assessment, B.S. Publications, 2003.
Reference Books	<ol style="list-style-type: none">1. CPCB Manual on solid waste Management2. Technological guidance manuals of EIA, MoEF3. M. Anjireddy, Textbook of Environmental Science and Technology, BS Publications, 2010.
e- Resources & other digital material	<ol style="list-style-type: none">1. www.nptel.ac.in/courses/1201080052. nptel.ac.in/courses/105106053. https://www.coursera.org/learn/solid-waste-management