

1.	Title of the course	Solid and Hazardous Waste Management
2.	Course number	CE512L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To CE5024/7
6.	To be offered by	Department of Civil and Environmental Engineering
7.	To take effect from	July 2022
8.	Prerequisite	CoT
9.	<p><b>Course Objective(s):</b> To create awareness and understanding of the problems associated with municipal solid waste, biomedical waste, hazardous waste, e-waste, industrial waste etc. To impart knowledge of legal, institutional and financial aspects of management of solid wastes. To create awareness on Environment and health impacts due to the mismanagement of solid waste. To build knowledge on engineering, financial, and technical options for integrated waste management.</p>	
10.	<p><b>Course Content:</b> Definitions of solid waste - municipal, hospital and industrial solid waste - Legal issues - health and environmental issues - Sampling and characterization – Integrated management of solid waste-reduction at the source, recovery/recycling, and disposal- Collection techniques- waste container compatibility, waste storage requirements, transportation of solid wastes. Treatment and disposal techniques for solid wastes–composting, vermin-composting, autoclaving, microwaving, incineration, non-incineration thermal techniques, use of refuse-derived fuels, landfilling design.</p>	
11.	<p><b>Textbook(s):</b></p> <ol style="list-style-type: none"> <li>Freeman H M, <i>Standard Handbook of Hazardous Waste Treatment and Disposal</i>, McGraw-Hill (1988).</li> <li>Tchobanoglous G, Theisen H and Vigil S, <i>Integrated Solid Waste Management: Engineering Principles and Management Issues</i>, McGraw-Hill (1993).</li> </ol>	
12.	<p><b>Reference(s):</b></p> <ol style="list-style-type: none"> <li>Tchobanoglous G, Kreith F, <i>Handbook of Solid Waste Management</i>, McGraw Hill, (2002).</li> <li>Government of India, <i>Manual on Municipal Solid Waste Management</i>, CPHEEO, Ministry of Urban Development, (2000).</li> <li>Manser A G R, Keeling A A, <i>Practical Handbook of Processing and Recycling of Municipal Solid Wastes</i>, Lewis Publishers, (1996).</li> <li>Vesilind P A, Rimer A E, <i>Unit operations in Resource Recovery Engineering</i>, Prentice Hall, (1981).</li> </ol>	