



# DR. RAM MANOHAR LOHIA AVADH UNIVERSITY, AYODHYA

## Syllabus of the Minor Subject Solid Waste Management For First and Second year of B.A./B.Sc./B.Com

Syllabus Developed by				
SN	Name of Expert/BoS Member	Designation	Department	College/ University

Programme/Class: Certificate		Year: First	Semester: I and II
Subject: Minor (Elective)			
Course Code: M040102T		Course Title: Solid Waste Management	
Credits: 05		Minor / Elective	
Max. Marks: 25+75		Min. Passing Marks:	
Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 5-0-0			
Unit	Topics	No. of Lectures	
I	<b>Introduction:</b> Definition of solid waste, different solid waste – domestic Waste, commercial waste, industrial waste, market waste, agricultural waste, biomedical waste, E-waste, hazardous waste, institutional waste, etc. • Sources of solid waste, Classification of solid waste – hazardous and non-hazardous waste. • Physical and chemical characteristics of municipal solid waste.	15	
II	<b>Storage, Collection and Transportation of Municipal Solid Waste</b> • Collection, segregation, storage and transportation of solid waste. • Tools and Equipment-Litter Bin, Broom, Shovels, Handcarts, Mechanical road sweepers, Community bin - like movable and stationary bin. • Transportation vehicles with their working capacity -Animal carts, Auto vehicles, Tractors or Trailers, Trucks, Dumpers, Compactor vehicles. Transfer station- meaning, necessity, location. • Role of rag pickers and their utility for society.	15	
III	<b>Composting of Solid Waste</b> • Concept of composting of waste, Principles of composting process. Factors affecting the composting process. • Methods of composting – Manual Composting – Bangalore method, Indore Method, Mechanical Composting – Dano Process, Vermi composting.	15	
IV	<b>Techniques for Disposal of Solid Waste</b> • Solid waste management techniques – solid waste management hierarchy,	15	

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	<p>waste prevention and waste reduction techniques</p> <ul style="list-style-type: none"> <li>• Land filling technique, Factors to be considered for site selection, Land filling methods-Area method, Trench method and Ramp method, Leachate and its control, Biogas from landfill, Advantages and disadvantages of landfill method, Recycling of municipal solid waste</li> <li>• Incineration of waste: Introduction of incineration process, Types of incinerators - Flash, Multiple chamber Incinerators, Products of incineration process with their use, Pyrolysis of waste – Definition, Methods</li> </ul>	
V	<p><b>Biomedical and E-waste management</b></p> <ul style="list-style-type: none"> <li>• Definition of Bio medical Waste.</li> <li>• Sources and generation of Biomedical Waste and its classification</li> <li>• Bio medical waste Management technologies.</li> <li>• Definition, varieties and ill effects of E- waste,</li> <li>• Recycling and disposal of E- waste.</li> </ul>	15

**SUGGESTED BOOKS:**

1. Gupta O.P, Elements of Solid Hazardous Waste Management, Khanna Book Publishing Co., Delhi Ed. 2018
2. Bhide, A. D., Solid Waste Management, Indian National Scientific Documentation Centre, New Delhi.
3. George Techobanoglous, Kreith, Frank., Solid Waste, McGraw Hill Publication, New Delhi.
4. Sasikumar, K., Solid Waste Management, PHI learning, Delhi.
5. Hosetti, B.B., Prospect and Perspectives of Solid Waste Management, New Age International Publisher.

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