

GANPAT UNIVERSITY									
FACULTY OF MANAGEMENT STUDIES									
Programme		Bachelor of Business Administration			Branch / Spec.		Business Analytics		
Semester	IV			Version		1.0.0.0			
Effective from Academic Year			2025-26		Effective for the Batch Admitted in				July 2024
Subject Code		BVAC205		Subject Name		Waste Management			
Teaching Scheme					Examination Scheme (Marks)				
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	02	00	00	00	02	Theory	25	25	50
Hours	02	00	00	00	02	Practical	00	00	00

### Pre-requisite:

## Objective:

- The aim of the course is to provide students an introduction about Waste Management.

### **Learning Outcome/Course Outcome:**

On successful completion of the course, the students will be able to:

## CO1- Understand the principles of waste management and sustainability.

CO2- Learn about different types of waste and their impact on the environment.

CO3- Explore waste management techniques, policies, and technologies.

CO4-Develop problem-solving skills for waste reduction and resource recovery.

## Mapping of PO-CO and PSO-CO:

	Course Outcome (CO) No.	PO-CO Mapping								PSO-CO Mapping					
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	3	2	2	3	3	2	2	2	3	2	2	3	2	2
	CO2	3	2	2	3	3	2	2	2	3	2	2	3	2	3
	CO3	3	2	3	3	3	3	3	2	3	3	2	3	3	3
	CO4	3	2	3	3	3	3	3	3	3	3	2	3	3	3

## Theory Syllabus

Unit	Content	Hrs.
1	<b>Fundamentals of Waste Management</b> Introduction to Waste Management: Definition, scope, and importance; Classification of waste; Sources of waste. Waste Generation and Characterization: Composition and properties of different wastes; Factors affecting waste generation; Waste auditing and assessment. Collection, Storage, and Transportation of Waste: Methods of waste collection; Storage techniques (bins, segregation, transfer stations); Transportation and logistics in waste management. Environmental and Health Impacts of Waste: Effects of improper waste disposal; Public health concerns; Climate change and pollution. Waste Management Policies and Regulations: National and international waste management policies; Role of government and NGOs.	15
2	<b>Waste Treatment and Sustainable Practices</b> Waste Treatment and Disposal Methods: Landfilling - Types and impacts; Incineration and thermal treatment; Composting and anaerobic digestion. Recycling and Resource Recovery: Recycling of paper, plastics, metals, and e-waste; Circular economy and sustainable material management; Waste-to-energy technologies. Hazardous and Biomedical Waste Management: Classification and handling of hazardous waste; Biomedical waste disposal methods; Safety regulations and protocols. Sustainable Waste Management Strategies: Zero waste initiatives; Role of 3Rs (Reduce, Reuse, Recycle). Emerging Trends and Future of Waste Management: Smart waste management systems; Role of AI and IoT in waste tracking	15
	Exam: Theory 100%	

## Text Book.

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Introduction to Waste Management: A Textbook by Syed E. Hasan	
<b>Reference Books:</b>	
	<p>Nemerow, N.L., "Industrial Waste Management", Addison-Wesley Publishing Company, Philippines.</p> <p>Household Recycling and Consumption Work by Kathryn Wheeler; Miriam Glucksmann</p> <p>Sustainable Solid Waste Management By Syeda Azeem Unnisa, S. Bhupathi Rav (1<sup>st</sup> Edition)</p> <p>Ronald E. Hester Roy M. Harrison 2007 Nanotechnology: Consequences for Human Health and the Environment.</p> <p>J. Glynn Henry and Gary. W. Heinke, "Environmental Science and Engineering", Prentice Hall of India, 2004</p>
<b>Online Resource:</b>	
	<p><a href="https://archive.nptel.ac.in/courses/105/106/105106056/">https://archive.nptel.ac.in/courses/105/106/105106056/</a></p> <p><a href="https://onlinecourses.nptel.ac.in/noc24_ce77/preview">https://onlinecourses.nptel.ac.in/noc24_ce77/preview</a></p> <p><a href="https://nptel.ac.in/courses/105106056">https://nptel.ac.in/courses/105106056</a></p>