**GANPAT UNIVERSITY**

**FACULTY OF MANAGEMENT STUDIES**

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|---|---|---|---|
| Programme | Bachelor of Business Administration | Branch / Spec. | Marketing Management |
| 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 with an introduction about Waste Management.

**Learning Outcomes/Course Outcomes:**

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 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 3 |
| CO2 | 3 | 2 | 1 | 2 | 2 | 1 | 3 | 3 | 2 | 2 | 2 | 1 | 2 | 3 |
| CO3 | 3 | 2 | 1 | 2 | 3 | 1 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 |
| CO4 | 3 | 2 | 1 | 2 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 |

**Theory Syllabus**

| Unit | Content | Hrs. |
|---|---|---|
| 1 | **Fundamentals of Waste Management**<br>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 | **Waste Treatment and Sustainable Practices**<br>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:**

Introduction to Waste Management: A Textbook by Syed E. Hasan

**Reference Books:**


Nemerow, N.L., "Industrial Waste Management", Addison-Wesley Publishing Company, Philippines.
Household Recycling and Consumption Work by Kathryn Wheeler; Miriam Glucksmann
Sustainable Solid Waste Management By Syeda Azeem Unnisa, S. Bhupatthi Rav (1st Edition)
Ronald E. Hester Roy M. Harrison 2007 Nanotechnology: Consequences for Human Health and the Environment.

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|---|---|
| | J. Glynn Henry and Gary. W. Heinke, “Environmental Science and Engineering”, Pretice Hall of India, 2004 |
| **Online Resource:** | |
| | https://archive.nptel.ac.in/courses/105/106/105106056/<br>https://onlinecourses.nptel.ac.in/noc24_ce77/preview<br>https://nptel.ac.in/courses/105106056 |