III Year - II Semester	L	T	P	C
20CE6318	3	0	0	3

SOLID WASTE MANAGEMENT

Course Objectives

The objectives of this course are:

- To impart the knowledge the methods of collection and optimization of collection routing of municipal solid waste.
- To acquire the principles of treatment of municipal solid waste
- To know the impact of solid waste on the health of the living beings
- To learn the criterion for selection of landfill and its design
- To plan the methods of processing such as composting the municipal organic waste.

Course Outcomes

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

- Determine the different characteristics of solid wastes
- Design the collection systems of solid waste of a town
- Design the transport systems of solid waste of a town
- Design a composting facility
- Recommend suitable site for landfill

SYLLABUS

UNIT- I

Introduction to Solid Waste Management: Goals and objectives of solid waste management, Classification of Solid Waste - Factors Influencing generation of solid waste - sampling and characterization –Future changes in waste composition, major legislation, monitoring responsibilities.

UNIT- II

Basic Elements In Solid Waste Management: Elements and their inter relationship – principles of solid waste management- onsite handling, storage and processing of solid waste

Collection of Solid Waste: Type and methods of waste collection systems, analysis of collection system - optimization of collection routes– alternative techniques for collection system.

UNIT- III

Transfer and Transport: Need for transfer operation, compaction of solid waste - transport means and methods, transfer station types and design requirements. Unit operations used for separation and transformation

UNIT- IV

Processing and Treatment: Processing of solid waste – Waste transformation through combustion and composting, anaerobic methods for materials recovery and treatment – Energy recovery – Incinerators.

UNIT- V

Disposal of Solid Waste: Methods of Disposal, Landfills: Site selection, design and operation, drainage and leachate collection systems –designated waste landfill remediation.

TEXT BOOKS

1. George Techobanoglous "Integrated Solid Waste Management", McGraw Hill Publication, 1993

REFERENCES

1. Vesilind, P.A., Worrell, W., Reinhart, D. "Solid Waste Engineering", Cenage learning, New Delhi, 2004
2. Charles A. Wentz; "Hazardous Waste Management", McGraw Hill Publication, 1995.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	3	2	3	3	1	1	1	1	3	2	3	2
CO2	3	3	2	3	2	3	3	1	1	1	1	3	2	3	2
CO3	3	3	2	3	2	3	3	1	1	1	1	3	2	3	2
CO4	3	3	2	3	2	3	3	1	1	1	1	3	2	3	2
CO5	3	3	2	3	2	3	3	1	1	1	1	3	2	3	2