IV Year II Semester	L	T	P	C
Code: 17CE835	3	1	0	0

SOILD WASTE MANAGEMENT
(Dept.Elective-IV)

Course Learning Objectives

The objectives of this course are:

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

Course Learning Outcomes

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

1. Understand objectives and classification of solid waste.
2. Design the collection systems of solid waste of a town
3. Design treatment of municipal solid waste and landfill
4. Understand about the transport means
5. To know the criteria for selection of landfill
6. To characterize the solid waste and design a composting facility

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 collectionsystem - 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- IV

Separation and Transformation of Solid Waste: unit operations used for separation and transformation: shredding - materials separation and recovery, source reduction and waste minimization.

UNIT- V

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

UNIT- VI

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

2. Vesilind, P.A., Worrell, W., Reinhart, D. "Solid Waste Engineering", Cenage learning, New Delhi, 2004
3. 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
CO6	3	3	2	3	2	3	3	1	1	1	1	3	2	3	2