SOLID WASTE MANAGEMENT
(Elective-III)

Course Code: 13CH2118

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Course outcomes:

On successful completion of the course, the student should be able to

CO1 : State solid waste characteristics and its sources.

CO2 : Identify and analyze different methods of treatment of solid waste.

CO3 : Illustrate Industrial practices in solid waste management.

CO4 : Discuss the significance of recycling reuse and reclamation of solid wastes.

CO5 : Assess the relationships between environmental guidelines, human activities and quality of impacted soil, water and air.

UNIT-I

Solid waste Characteristics, Collection, Transportation and Health impacts:

Types of sources of solid waste, transportation of solid waste, health impacts of solid waste

UNIT-II

Treatment of Solid waste:

Methods of treatment of solid waste: Land filling, Composting, Vermitechnology, Anaerobic digestion, Inceneration, Pyrolysis, Catalytic Hydrogenation.

UNIT-III

Industrial Practices in solid waste management: Chemical Industry, Refineries, Aluminum, Iron and Steel, Lead and Zinc smelting, Nickel ore processing and Refining, Copper smelting.

UNIT-IV

Evaluation and selection of facilities for solid waste management: Introduction and Economic analysis Recovery, Recycling and Reuse.

UNIT-V

Solid Waste Management Planning, Monitoring and Control, Environmental laws and Regulatory Drivers: NEPA, RCRA, Clean air act, clean water act, CERCLA, Emergency Planning, and community Right to know Act, Superfund Amendments and Reauthorization Act, National Contingency plan, Oil pollution act, Occupational Safety and Healthy act, Pollution prevention act, Safe drinking water act, Toxic substances control act.

TEXTBOOK:

1. Nag A and Vijaya kumar K *"Environmental Education and Solid Waste Management"* New Age International Publishers, 2005.

REFERENCE:

1. Cheremisinoff N.P *"Handbook of Solid waste management and waste minimization technologies"* Butterworth-Heinemann Publisher, 2003.

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