



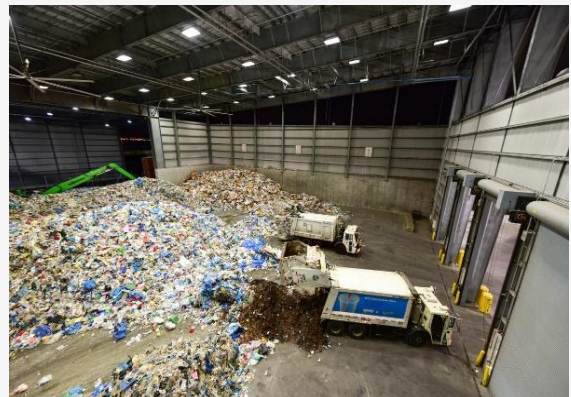
About the Course

This course is a unique blend of core concepts for Solid and Hazardous Waste engineering with skill development on waste management practices. The learners will understand the fundamentals applied in solid waste generation, collection, transportation, treatment, and disposal with brief introduction on policy and governance of Swachh Bharat Mission. These concepts are weaved with demonstrations and real case studies/projects through digital platform, practical use cases in biogas technology, composting, material recovery facility, derived fuel technologies, pyrolysis, and on special waste management. Latest concepts on circular economy, data analytics, waste collection route optimization and application of IoT in waste management are explained with industrial case studies. Skill based projects will enable the skill and knowledge among learners but also make them industry ready to pursue challenge and practical implementations.



Key Topics

- ▶ Physicochemical characterization of waste materials, vehicle routing
- ▶ Selection of liners and landfill designs
- ▶ Evaluation and design of waste management methods like composting, waste incinerators, and biogas technology
- ▶ IoT and data analytics for vehicle and waste bins for route optimization and load calculations



Course Objectives

The objective of the course is:

- ▶ To facilitate the learners to understand fundamentals of key elements in solid waste management and governance
- ▶ To impart knowledge to arrive strategies for waste management and selection of technologies for processing, treatment, and disposal
- ▶ To examine and plan designs for material recovery facility, micro composting units, incinerators, biodigester, and landfills

Learning Outcomes

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

- ▶ Comprehend the elements of solid waste management and categorize the waste based on physical, chemical, and biological characteristics.
- ▶ Design a waste collection system for onsite collection, storage and demonstrate waste transfer and transport operations
- ▶ Evaluate and develop waste processing and treatment methods for solid and hazardous waste with sustainable practices
- ▶ Select appropriate disposal methods such as landfills, waste to energy plants and its handling in an efficient way
- ▶ Develop reduce, reuse, recycling methods for special waste and prepare smart solutions for solid waste management