

Course Code	Course Title	Credit Hours
ENS-822	Solid and Hazardous Waste Management	3 (3+0)

Course Description

This course will provide information about the problems and impacts associated with solid and hazardous waste and the corresponding scientific, engineering and management knowledge to effectively manage these wastes. The students will be able to understand the sources, composition, and characteristics of solid waste; quantify the solid waste generation and associated collection requirements; and design and manage the processing, treatment, and disposal techniques for wastes.

Course Outline

History, generation, sources, impacts, classification and characteristics of municipal solid waste; Onsite handling and storage, collection, transfer and transport of municipal solid waste; Physical, chemical and biological properties of solid waste; Physical, chemical and biological transformation of solid waste; Hazardous waste sources, properties and impacts; Transformation and management of hazardous waste; Concept of integrated solid waste management and its components; Recycling and disposal techniques of municipal solid waste; Landfilling; Thermal conversion; Aerobic composting; Anaerobic digestion; Economic evaluation of solid waste management systems; Case studies on management, treatment and disposal techniques of solid waste.

Recommended Books

1. Tchobanoglous, G., Theisen, H. and Vigil, S. (1993). Integrated Solid Waste Management: Engineering Principles and Management Issues, McGraw Hill Pub. Co., ISBN: 0071128654.
2. Polprasert, C. and Kootatep, T. (2017). Organic Waste Recycling: Technology, Management and Sustainability, 4th Edition, IWA Publishing, ISBN: 9781780408200.
3. Shah, Kanti L., (2000). Basics of Solid and Hazardous Waste Management Technology, Prentice Hall, ISBN: 0139603786.