

Module Title: Municipal Waste Management

Elective Module

Content:

- Categorisation and sources of waste: municipal, industrial and hazardous wastes.
- Legislative requirements for management of non hazardous municipal waste including relevant National Policy documents.
- Waste Licensing, Permits and Certificates of Registration.
- Generation rates: estimation of solid waste quantities, factors that affect generation rates, current trends.
- Solid waste management: Regional waste management plans for municipal waste, materials flow in society, reduction in raw materials usage, reduction in solid waste quantities, reuse of solid waste materials.
- Mechanical Biological Treatment: process description and performance.
- Recovery of biological conversion products: Aerobic conversion – aerated static pile, in vessel composting and windrow composting systems – process microbiology. Anaerobic conversion, process microbiology, anaerobic contact process, process design, gas production, collection and use.
- Recovery of thermal conversion products: combustion of waste materials, conceptual design of a thermal treatment facility to include air emission standards, health effects, air pollution meteorology and atmospheric dispersion modelling – point source dispersion. Air emission control systems – particulate and gaseous systems.
- Ultimate disposal: design and operation of municipal waste landfills in accordance with EPA guidelines.