

GUJARAT TECHNOLOGICAL UNIVERSITY
B.E. SEMESTER : V
ENVIRONMENTAL SCIENCE AND ENGINEERING

Subject Name: Solid Waste Management

Subject Code:153703

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam(E)	University Exam(P)	Mid Sem Exam(Theory) (M)	Practical (Internal)
4	2	0	6	70	0	30	50

Sr No	Course Contents
1	Sources, generation, classification & composition of solid wastes. Solid waste management methods - Sanitary land filling, Recycling, Composting, Vermi composting, Incineration, energy recovery from organic waste. Solid waste collection, transportation, processing, recovery and disposal.
2	Solid Waste Management Plan, Waste minimization technologies, Hazardous Waste Management, Sources & Classification, physicochemical properties, Hazardous Waste Control & Treatment.
3	Hospital Waste Management. Hazardous Waste Management & Handling rules, 1989 & 2000 (amendments).
4	Landfilling: Site selection criteria, landfill layout, landfill sections, Occurrence of gases and leachate in landfills: composition and characteristics, generation factors, initial adjustment phase, transition phase, acid formation phase, methane formation phase, maturation phase of gases and leachate.
5	Pyrolysis; Incineration: waste characterization, combustion calculation, unit operations, supply of air, products of combustion, furnace temperature, furnace calculation, storage of refuse, waste reduction and environmental control.
6	Industry specific solid waste management: Agriculture, Process industry, Mineral and Metallurgical industry, Disposal of industrial and mill tailings, Resource and energy recovery; Recycling of solid waste.

TEXT BOOKS:

1. Solid Waste Management CPCB. New Delhi.
2. Ecotechnology for pollution control & environmental management - By R.K. Trivedi & Arvind Kr.
3. Basic Environmental Technology - J.A. Nathanson
4. Guidelines for Management and Handling of Hazardous wastes MOEF (1991), Govt. of India
5. Datta, M; Waste Disposal in Engineered Landfills, Narosa Publishers, Delhi.
6. Handbook of solid management” Frank Kerith, McGraw Hill, Inc. USA (1994).
7. Waste Management “Asian and Pacific Center for Transfer of Technology (N.D.) India”, September 1993.