

COURSE TITLE	BASICS OF WASTE MANAGEMENT
COURSE CODE	04BC0232
COURSE CREDITS	2

Course Outcomes: After completion of this course, student will be able to:

- 1 Know about various types of waste and its impact on the environment
- 2 Classify the sources, types, composition and quantities of solid waste.
- 3 Characteristics of hazardous waste-Biomedical waste, e -waste and its management aspects.
- 4 Apply waste management techniques from environmental and economic point of view.

Pre-requisite of course:NA

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
2	0	0	50	30	20	0	0

Contents : Unit	Topics	Contact Hours
1	Waste Management Introduction to solid waste, classification, sources, characteristics, methods of disposal, impact of improper waste disposal on environment and health, generation of waste, waste minimization, collection and segregation of waste, storage, transfer and transport, Recycling, Integrated management of wastes, Principles of solid management; UN conventions (e.g Basel Convention), Municipal Solid Wastes(Management and Handling) Rules, 2000.	10
2	Processing technologies Objectives of waste processing, energy generation, resource recovery, composting processes, Vermicomposting,, Biogas technology, Recycling, incineration and other thermal processes, disposal, Landfills.	10
3	Hazardous Waste Introduction to hazardous waste, properties, generation, Impacts on health, environment and economy; Storage and handling of hazardous wastes, Disposal practices; Biomedical waste, e-waste management, Hazardous Wastes (Management and Handling) Rules, 1989; Basel Convention for trans-boundary movement of hazardous wastes. Case studies	10
Total Hours		30

Textbook :

- 1 Environmental waste management, Chandra,R.(Ed.), CRC Press, 2016
- 2 Hazardous waste management. , LaGrega, M.D.,Buckingham, P.L.,& Evans, J.C, Waveland Press., 2010

References:

- 1 Integrated solid waste management: Engineering principles and management Issues, Integrated solid waste management: Engineering principles and management Issues, Tchobanoglous,G.,Theisen,H.,&Vigil,S, McGraw-Hill, 1993
- 2 Environmental Engineering: A design approach. Upper Saddle River, Environmental Engineering: A design approach. Upper Saddle River, Sincero, A.P.,& Sincero,G.A, Prentice Hall, 1996

Suggested Theory Distribution:

The suggested theory distribution as per Bloom’s taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
20.00	30.00	25.00	15.00	10.00	0.00

Instructional Method:

- 1 NA

Supplementary Resources:

- 1 NA