

## EVPE3004 MUNICIPAL WASTE MANAGEMENT (3-0-0)

### Course objective

- To have knowledge about the sources and types of Municipal Waste
- To learn the importance of methods of collection and selection of location for Municipal Waste
- To understand the various methods of disposal of Municipal Waste

### Module I

**Sources and types of municipal wastes:** Introduction - Sources and types of Municipal Waste, quantity – factors affecting generation of Municipal Waste, characteristics – methods of sampling and characterization, effects of improper disposal of Municipal Waste, public health effects- principle of Municipal Waste management, social & economic aspects- public awareness - role of NGOs- legislation

### Module II

**On-Site Storage & Processing:** On-site storage methods, materials used for containers, on-site segregation of Municipal wastes, public health & economic aspects of storage, options under Indian conditions, Critical Evaluation of Options

### Module III

**Collection and Transfer:** Methods of Collection, types of vehicles – manpower requirement, collection routes- transfer stations, selection of location, operation & maintenance, options under Indian conditions

### Module IV

**Off-site processing and Disposing:** Processing techniques and Equipment, Resource recovery from Municipal wastes, composting, incineration- Pyrolysis, Dumping of municipal solid waste, sanitary landfills, design and operation of sanitary, Leachate collection & treatment

### Course outcomes:

After successfully studying this course, students will be able to:

- an ability to apply knowledge of mathematics, science, and engineering for Municipal Waste
- an ability to identify, formulate, and solve engineering problems associated with Municipal Waste
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice related to Municipal Waste Management

### Books:

- P. Jayarama Reddy, Municipal Solid Waste Management: Processing - Energy Recovery, CRC press
- S. Kumar, Municipal Solid Waste Management in Developing Countries, CRC Pr I Llc; 1<sup>st</sup> edition