

Title: **EPHM 4050 Integrated Waste Management**

Units: 3

Objectives: The amount of waste/solid waste produced everyday is tremendous and ways of properly handling and disposing them permanently have always been in demand. The subject explores and compares different options in reducing, handling, and treatment of solid waste.

Learning outcomes:

The module will enable participants to:

- Understand waste reduction and recycling concepts;
- Understand different disposal and treatment methods of waste;
- Develop strategies for effective and environmental friendly waste management.

Assessment: Assignments (70%)  
Examination (30%)

References:

- Kreith, F. (1994) Handbook of Solid Waste Management. McGraw-Hill, Inc., New York.  
McBean, E.A., Rovers, F.A., and Farquhar, G.J. (1995) Solid Waste: Landfill Engineering and Design, Prentice Hall, New York.  
Tchobanoglous, G., Theisen, H., and Vigil, S.A. (1992) Integrated Solid Waste Management: Engineering Principles and Management Issues. McGraw-Hill, Inc., New York.

Subject content in outline:

- Introduction
  - Waste definition, composition and classification
  - Functional elements of waste management
  - Integrated waste management-hierarchy, planning and operation
- Source Reduction for Municipal Solid Waste
  - Source reduction characterization
  - Source reduction calculation and planning
- Waste Recovery and Recycling
  - Waste reuse and recycling opportunities
  - Recycling of materials found in municipal solid waste
  - Key issues in material recycling and future opportunities
- Waste Collection and Transfer
  - Significance of collection, transfer and street sweeping
  - Sound technical options
  - Management issues in waste collection and transfer
- Disposal/Treatment of Solid Waste
  - Composting
  - Landfilling
  - Incineration
  - Others
- Case study