

**PMI5J002 INDUSTRIAL WASTE TREATMENT & MANAGEMENT (4-0)**  
**(Professional Elective Paper)**

**Module I: INTRODUCTION**

**(8)**

Types of industries and industrial pollution – Characteristics of industrial wastes – Population equivalent – Bioassay studies – effects of industrial effluents on streams, sewer, land, sewage treatment plants and human health – Environmental legislations related to prevention and control of industrial effluents and hazardous wastes

**Module: II CLEANER PRODUCTION**

**(8)**

Waste management Approach – Waste Audit – Volume and strength reduction – Material and process modifications – Recycle, reuse and byproduct recovery – Applications.

**Module: III POLLUTION FROM MAJOR INDUSTRIES**

**(9)**

Sources, Characteristics, waste treatment flow sheets for selected industries such as Textiles, Tanneries, Pharmaceuticals, Electroplating industries, Dairy, Sugar, Paper, distilleries, Steel plants, Refineries, fertilizer, thermal power plants – Wastewater reclamation concepts

**Module: IV TREATMENT TECHNOLOGIES**

**(11)**

Equalisation – Neutralisation – Removal of suspended and dissolved organic solids – Chemical oxidation – Adsorption – Removal of dissolved inorganics – Combined treatment of industrial and municipal wastes – Residue management – Dewatering – Disposal

**REFERENCES:**

1. Shen T.T., "Industrial Pollution Prevention", Springer, 1999.
2. Stephenson R.L. and Blackburn J.B., Jr., "Industrial Wastewater Systems Hand book", Lewis Publisher, New York, 1998
3. Freeman H.M., "Industrial Pollution Prevention Hand Book", McGraw Hill Inc., New Delhi, 1995.
4. Bishop, P.L., "Pollution Prevention: Fundamental & Practice", McGraw Hill, 2000.
5. Pandey, "Environmental Management" Vikas Publications, 2010.
6. Industrial Wastewater Management, Treatment and Disposal", (WEF – MOP – FD3) McGraw Hill, 2008