

6th Semester	Industrial Waste Treatment and Management	L-T-P 3-0-0	3 CREDITS
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Module-I:**(8 hours)**

Introduction: 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.

Module-II:**(6 hours)**

Environmental legislations related to prevention and control of industrial effluents and hazardous wastes.

Module-III:**(8 hours)**

Cleaner Production: Waste management Approach – Waste Audit – Volume and strength reduction – Material and process modifications – Recycle, reuse and by-product recovery – Applications.

Module-IV:**(10 hours)**

Pollution from Major Industries: 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-V:**(8 hours)**

Treatment Technologies: 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

Books:

- [1] Stephenson R.L. and Blackburn J.B., Jr., “Industrial Wastewater Systems Hand book”, Lewis Publisher, New York, 1998
- [2] Freeman H.M., “Industrial Pollution Prevention Hand Book”, McGraw Hill Inc., New Delhi, 1995.
- [3] Bishop, P.L., “Pollution Prevention: Fundamental & Practice”, McGraw Hill, 2000.