

PCI7J004

INDUSTRIAL WASTE MANAGEMENT & DISPOSAL 3-0-0

Module I:

Industrial Pollution: Types of industries and industrial pollution, Characteristics of industrial wastes, Effects of industrial effluents on streams, sewer, land, sewage treatment plants and human health, Hazardous wastes, Environmental legislations related to prevention and control of industrial effluents and hazardous wastes, Pollution Control Boards.

Module II:

Waste Management Approach:Waste management approach, Waste Audit, Volume and strength reduction, Material and process modifications, Recycle, Reuse and by-product recovery, Applications.

Module III:

Industrial Waste Water Treatment: Sources, Quantification and characterization of effluent, Waste water treatment process, Primary and secondary treatment of waste water, Aerobic and anaerobic treatment processes, various reactor configurations.

Advanced Waste Water Treatment Processes: Fundamentals and mechanism of adsorption, adsorption isotherms, absorption, membrane separation and chemical oxidation processes and their design principles.

Module IV:

Case Studies of Industrial Pollution Control:Sources & their Characteristics, Waste water and air quality management in specific industries: Textiles, Tanneries, Distilleries, Refineries, Thermal power plants, Fertilizer plant, Steel plant, Pulp and paper, Sugar and dairies, Cement, Sponge iron industries.

Text Book:

1. M.N.Rao & A.K.Dutta (1995), Wastewater Treatment, Oxford IBH Publication.
2. Nelson, L. Nemerow (2000), Liquid Waste of Industry, Theories, Practices and Treatment, Addison-WesleyPublishing Company, London.
3. Wastewater treatment processes, Metcalf and Eddy, Tata McGraw hill
4. Environmental Engineering, Peavy and Rowe, Tata McGraw Hill

Reference books:

1. T.T.Shen, 1999, Industrial Pollution Prevention, Springer publications.
2. R.L.Stephenson & J.B.Blackburn Jr. (1998), Industrial Wastewater Systems Hand book, Lewis Publishers, NewYork.
3. Environmental Assessment Source book (1991), Vol.I, II & III., The World Bank, Washington, D.C.
4. Judith Petts (1999), Hand book of Environmental Impact Assessment, Vol.I & II, Blackwell Science.