CE- 705 Elective- I (CE- 7103Industrial Waste Treatment)

Unit - I.

Problem of Water Pollution: Effects of wastes on streams and sewage treatment plant. Natural purification of streams. oxygen sag curve. allowable organic load on streams classification of stream, stream standards and effluent standards. requirement of water for different purposes.

Unit - II.

Measurement of Waste Water Volume: Sampling of waste waters, grab and composite samples. analysis of waste water. biochemical oxygen demand. chemical oxygen demand and pH value of waste, toxicity of waste by bioassay method. Pretreatment of Wastes: Volume and strength reduction, salvage of materials, recovery of by products, reuse of waste water.

Unit - III.

Conventional Methods of Treatment of Waste Water: Removal of suspended solids, removal of inorganic and organic dissolved solids, studge disposal, advance methods of treatment, such as reverse osmosis, ion exchange, electrodialysis, algal harvesting etc. low cost treatment plants. common effluent treatment plant, design and operation.

Unit - IV.

Combined Treatment of Waste Water Sewage: Energy requirement optimization and bedget, municipal regulation, sewer rental charge, instrumentation in waste water treatment plants, collection of data, operation and maintenance of plants, water pollution control board.

Unit - V.

Brief study of industrial processes and treatment methods of waste water from common industries, such as textile, dairy, paper and pulp, tannery, distillery. Hazardeous wastes- Impact handing and disposal.

Reference Books :-

1.“Liquid Waste of Industries - Theories, Practice and Treatment" - N.L. Nemerow, WEsley Publishing Co.
2.Treatment of Industrial Waste - E.B. Besselievre & Max Schwartz - Mc Graw Hill Book Company
3."Waste Water Engg. - Treatment Disposal & Reuse" - Metcalf & Eddy - Tata Mc Graw Will, New Delhi
4.Waste Water Treatment - Arceivala - Tata Mc Graw Will, New Delhi
5.Industrial Pollution Control, hand book - Lund H.F. Tata Mc Graw Will, New Delhi