OTT752 TEXTILE EFFLUENT TREATMENTS

DETAILED SYLLABUS

OBJECTIVES:

- To impart awareness about the pollution created by different stages of wet processing
- To familiarize the students about the importance of water and its analysis
- To enable the students to understand about the waste water treatment plants and various treatments carried out

UNIT I

Constituents of water and their effect on textile wet processing, Effluent discharge standards for inland surface water public sewers, on land for irrigation, marine coastal areas and drinking water parameters, Quality requirements of water for cotton and synthetic Textile processing.

UNIT II

Characteristics and treatment of cotton, synthetics and wool processing effluents, Reduction of pollution load, Primary treatment methods - screening, sedimentatation, equalisation, neutralisation, coagulation and flocculation.

UNIT III

Secondary treatment methods – Trickling filtration, activated sludge process, aerated lagoons, secondary sedimentation, oxidation ponds, Anaerobic Digestion, sludge disposal.

UNIT IV

Tertiary treatment – Evaporation (solar and steam), Advanced oxidation system, Membrane technologies (MF, UF, NF & RO), Reverse osmosis, ion exchange and activated carbon treatment. Quality parameters at entry and exit of RO.

UNIT V

Air Pollution - Properties of air pollutants, control of air pollutants – Air pollution control equipment, Ambient air quality standards. Noise pollution – Types of noise – Noise measurement and – Control of noise pollution.

OUTCOMES:

- Upon completion of the course, the students will be able to
- Understand the textile processing related causes for pollution
- Understand the effluent discharge standards and different processes involved in waste water treatment
- Perform the research and development to produce zero discharge effluents

TEXTBOOKS:

1. Rao,C.S., “Environment Pollution control Engineering”, New age International Ltd. and Publishers, N.Delhi, 2004.

2. Reife, A., and Freeman, H.S., (Ed)., “Environmental chemistry of dyes and pigment”, Wiley., London, 2000, ISBN: 047158276.

REFERENCES:

1. Horrockks, A.R (Ed)., “Ecotextiles’98: Sustainable development”, The Text.Inst., Manchester 1999, ISBN: 1855732426.

2. Modak.P., “The textile industry and the environment”, UNEP: HMSO, Blackwells, Leeds, 2003, ISBN: 9280713671