

PCH115 ENVIRONMENTAL POLLUTION CONTROL

L	T	P	Cr
3	1	0	3.5

Course Objective:

To learn about air and water pollution control techniques and solid waste management.

Introduction: Environmental pollution and socioeconomic impacts, Concept of EIA, Environmental modeling as a tool for environmental management.

Air Pollution: Air quality modeling for point, line and area sources, Dispersion modeling for short and tall stacks for short and long distances, Dense Gas Dispersion Modeling (DGADIS), Design of various pollution control equipments.

Water Pollution: Surface water quality modelling, Movement and dispersion of pollutants into aquifers, Ground water quality impacts.

Wastewater Treatment Plant design: Physical unit operations, Chemical precipitation, disinfection, adsorption, Aerobic and anaerobic biological treatment processes, Advanced wastewater treatment processes: electro-chemical treatment methods, advanced oxidation processes, membrane processes.

Industrial Noise Pollution: Properties of noise and its effects, Sources and control of industrial noise pollution.

Solid Waste: Sources and classification, Methods of solid waste disposal, Solids waste and landfill management, Natural composting, Accelerated composting of industrial sludge, Municipal solid waste management, Toxic waste management, Incineration of industrial waste.

Course learning outcomes (CLOs):

The students will be able to

1. evaluate impact of different types of waste generated
2. apply knowledge for the protection and improvement of the environment
3. model the atmospheric dispersion of air pollutants
4. monitor and design the air and water pollution control systems
5. select and implement industry specific waste treatment system

Recommended books:

1. *Sincero, P., and Sincero, G.A., Environmental Engineering: A Design Approach, Prentice Hall (1996).*
2. *Masters, G.M., Introduction to Environmental Engineering and Science, Prentice Hall (2006).*
3. *De Nevers, N., Air Pollution Control Engineering, McGraw-Hill (1995).*
4. *Flagan, R.C., and Seinfeld, J.H., Fundamentals of Air Pollution Engineering, Prentice Hall (1988).*

Evaluation Scheme:

S.No.	Evaluation Elements	Weightage (%)
1.	MST	30
2.	EST	45
3.	Sessional (may include Assignments/Projects/Tutorials/Quizes/Lab Evaluations)	25