Birla Institute of Technology & Science, Pilani
Hyderabad Campus

FIRST SEMESTER 2019-2020

Course Handout Part II

01-08-2019

In addition to part-I (General Handout for all courses appended to the timetable) this portion gives further specific details regarding the course.

Course No. : CHE F411
Course Title : Environmental Pollution Control
Instructor-in-Charge : Dr. D.Purnima

Course Description:

This course gives the scope to students to understand air pollutants such as SOx, NOx and their analysis and treatment such as flue gas treatment using scrubbers. Second part of the course covers waste water analysis such as BOD, COD and their treatment to get pure water. Third part of the course covers Solid waste management and fourth part will be dealt with the noise pollution.

Scope and Objective

The scope of this course is to study the different types of environmental pollution and the methods to control them

- Understanding different types of environmental pollution and the impact of various pollutants
- To understand the protocols to estimate the extent of pollution by using various analytical tools
- Studying different methods of controlling various types of pollution to meet the desired standards

Textbooks:

1. Rao, C.S., Environmental Pollution Control Engineering, New Age International 2nd Ed., 2006
2. Mackenzie L Davis, David A Cornwell. Introduction to Environmental Engineering, Fourth Edition. McGraw Hill, 2010

Reference books

1. Peavy, H.S., Rowe, D.R. and Technobanolous, G., "Environmental Engineering" McGraw Hill, 1985.

Course Plan:

Lecture No.	Learning objectives	Topics to be covered	Chapter in the Text Book
1	Introduction: An Overview of Environment pollution control	Overview of environment & its impacts	T1-Ch. 1 &T2
2-5	Air Pollution: Sources and Effects	Types of air pollutants, Effect of air pollution, Air pollution laws and standards	T1-Ch. 2&T2
6-9	Meteorological Aspects of Air Pollutant Dispersion	Concept of dispersion of pollutants in atmosphere, Understanding of air dispersion models	T1-Ch. 3&T2

10-12	Air Pollution Sampling and Measurement	Details of air pollutant samplers	T1-Ch. 4&T2
13-17	Air Pollution Control Methods & Equipment (Control of particulates)	Principles of air pollution control methods, Problems related to these methods (control of particulates)	T1-Ch.5 &T2
18-20	Control of Specific Gaseous Pollutants	Various control techniques for criteria pollutants such as SO_2, NO_X, CO and hydrocarbons	T1-Ch. 6&T2
21-22	Source and Classification of Water Pollutants	Introduction to water pollution, Types of water pollutants, Laws & standards of water pollution	T1-Ch.7&T2
23-26	Wastewater Sampling and Analysis	Sampling methods, Understanding of concepts of DO, BOD, COD, TOC, inorganic substances, physical characteristics of water	T1-Ch. 8&T2
27-32	Wastewater Treatment (Primary and Secondary & advanced treatment)	Concept of primary and secondary treatment techniques	T1-Ch. 9&T2
33-35	Solid Waste Management	Classification of solid waste & Various disposal methods	T1-Ch.10&T2
36	Hazardous Waste Management	Classification of Hazardous waste	T1-Ch.11 &T2
37-39	Noise Pollution & Environmental Impact Analysis	Understanding of noise pollution & its impact on environment	Study material will be given by IC
40-42	Laboratory visits	Demonstration of equipment	

Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Mid Term Test	90 min	25%	4/10, 9.00 -- 10.30 AM	CB
Quizzes	-	10 %		CB
Assignments		20%		OB
Comprehensive Exam.	3 hours	45%	11/12 FN	15% OB; 30% CB

Chamber Consultation Hour: To be announced in the class.

Notices: All notices concerning this course will be uploaded in CMS

Make-up Policy: Only for genuine cases with prior permission from IC.

Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

INSTRUCTOR-IN-CHARGE
Dr. D Purnima
CHE F411