SECOND SEMESTER 2015-16
Course Handout

05/01/2016

Course No. : **CHE F411**
Course Title : **Environmental Pollution Control**
Instructor-in-Charge : **DR. RAMAN SHARMA**

1. Course Description
Air & water pollutants; sampling and analysis; control methods for air & water pollutants; modelling of different control techniques; advanced wastewater treatment processes; solid waste management, noise pollution. case studies; associated laboratory.

2. Scope & Objective
This course aims at providing students knowledge about
- Air pollution and its control.
- Water pollution and its control.
- Solid waste management.
- Noise Pollution.
- Related numerical problems.

3. Text Book (TB)
T1. Davis, M. L. and D. A. Cornwell, "Introduction to Environmental Engineering", *McGraw Hill,* New York, 5th ed., 2013.

Reference Books (RB)
R1. Peavy, H. S.; Rowe, D. R. and Tchobanoglous, G. Environmental Engineering, McGraw-Hill International Edition, 1985.

R2. Tchobanoglous, G.; Burton, F. L. and Stensel, H. D. Wastewater Engineering: Treatment and Reuse, Tata McGraw-Hill Publishing Company Limited, Fourth Edition, 2003.

R3. Rao, C.S., Environmental Pollution Control Engineering, New Age International 2nd Ed., 2006.

4. Course Plan

S.No.	Topics	Learning objectives	Reference To Text Book
	Water Pollution		
M1:1-5	Water pollutants/Water quality parameters/	Overview of various water quality parameters,	Ch. 7 & 8 (T1) Ch. 2 & 3 (R1) and Ch. 2

	Water pollutants sampling and analysis. Associated laboratory.	sampling	(R2)
M2:6-10	Engineered systems for water purification	Various water purification techniques	Ch. 4 (R1)
M3:11-15	Engineered systems for waste water treatment and disposal	Various waste water treatment techniques	Ch. 8 (T1) Ch. 5 (R1) and Ch. 5 (R2)
M4:16-20	Advanced wastewater treatment processes. Case study	Knowledge about advanced waste water treatment processes	Ch. 5 (R1) and Ch. 11 (R2)
	Air Pollution		
M5:21-25	Air Pollution: Sources and Effects	Types of air pollutants, Effect of air pollution,	Ch. 9 (T1) Ch. 7 (R1) & Ch. 2 (R3)
M6:26-30	Air Pollution Sampling and Measurement	Details of air pollutant samplers	Ch. 4 (R3)
M7:31-33	Air Pollution Control Methods & Equipment (Control of particulates).	Principles of air pollution control methods, Problems related to these methods (control of particulates)	Ch. 9 (T1) Ch. 9 (R1) & Ch. 5.1-5.4 (R3)
M8:34-36	Air Pollution Control Methods & Equipment (Control of Gaseous Pollutants). Case study	Principles of air pollution control methods, Problems related to these methods (control of gaseous pollutants)	Ch. 9 (T1) Ch. 9 (R1) & Ch. 5.6 (R3)
	Solid Waste Management		
M9:37-38	Solid waste Management	Knowledge about various aspects related to management of solid waste	Ch. 11 (T1) Ch. 10 & 11 (R1)
	Noise Pollution		
M10:39-40	Noise Pollution and Control	Introduction to noise pollution and its control	Class notes will be provided

5. Evaluation Scheme

EC	Evaluation	Duration	Weightage	Weightage	Date,	Remarks

No.	Component (EC)		(%)	(Marks)	Time	
1	Mid Semester Test	1.5 hrs	30	30	16/3 2:00 - 3:30 PM	CB
2	Project (before mid-semester)	-	15	15	-	OB
3	Assignment (after mid-semester)	-	15	15		OB
4	Comprehensive Exam	3 hrs	40	40	5/5 FN	CB

CB = Close Book **OB** = Open Book

Chamber consultation hour will be announced in the class.

- The **notices,** if any**,** concerning the course, will be displayed on the notice board of the Department of Chemical Engineering **only**.
- **Make-up** will be granted for **genuine cases only**. Prior permission of IC is compulsory.

Instructor-in-charge | **CHE F411**