

COURSE CODE: ENS-446
COURSE NAME: Air & Noise Pollution
CREDIT HOURS: Theory = 3 Practical = 0 Total = 3
CONTACT HOURS: Theory = 48 Practical = 0 Total = 48
PREREQUISITE: None
MODE OF TEACHING: Three hours of lecture per week

Course Description:

The course aims to introduce types of air, noise and electromagnetic waves. Causes and sources of air pollution, particulate matter, techniques of measurement of air pollutants and particulate matters, greenhouse gases, global warming, causes sources and effects, ozone depletion, acid rain. Air pollution prevention and control, strategies/methodology compliance of NEQS standards for air pollutants, nature of noise and electromagnetic waves. Propagation of electromagnetic waves and electromagnetic wave characterization, potential impacts of health impact of electromagnetic waves and noise pollution, noise measuring techniques and methodology etc. will be covered in this course.

Course Outline:

Week#	Topics
1	Air Pollution Essentials; The Risks of Air Pollution
2	Measurement and Monitoring of Air Pollution
3	The Regulatory Control of Air Pollution
4	The Engineering Control of Air Pollution
5	Introduction to Noise Pollution; Basic concepts of sound and noise
6	Noise and its effects; approaches to noise problems
7	Planning to control noise pollution; Noise reduction
8	Characteristics and impact of surface transportation noise
9	Midterm Exam – MSE
10	Traffic noise reduction; Aircraft noise reduction; Preventing airport noise
11	Control of noise pollution from diesel generator sets; Noise pollution in oil

	exploring and its control
12	Noise pollution and its control in mining and product industries
13	Sound control technologies and instrumentation
14	Sound control technologies and instrumentation
15	Electromagnetic waves generated by cellular tower and its potential impact on humans and the environment
16	Electromagnetic waves generated by cellular tower and its potential impact on humans and the environment
17	Class presentations
18	End Semester Exam

Text and Material:

1. Electromagnetic Surface Waves: A Modern Perspective (Elsevier Insights) by John Polo, Tom Mackay and Akhlesh Lakhtakia (2013).
2. Fundamentals of Air Pollution by Daniel Vallero, 5th Edition (2014).
3. An Introduction to Air Pollution Control by J. Paul Guyer (2017).
4. Textbook of Noise Pollution and its Control. S.C. Bhatia. Atlantic Publishers and Distributors (2021).

ASSESSMENT SYSTEM:

Theoretical/Instruction	100%
Assignments	10%
Quizzes	15%
Mid Semester Exam	25%
End Semester Exam	50%
Practical Work	0%
Lab Attendance	0%
Lab Report	0%
Lab Quiz	0%
Lab Rubrics	0%