

Branch Name:	Environment Engineering
Program Code:	ET212
Subject Title:	Air and Noise Pollution
Subject Code:	2ET2120102T
Pre-requisite Subject:	Basics & Fundamentals of air and noise pollution

Course Objective:

- Student should acquire knowledge related to the air pollution
- Student should acquire knowledge related to the noise pollution
- Prepare plan strategies to control and reduce air pollution

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
3	3	-	-	3	24	60	16	40	-	-	-	-	100

Subject Contents				
Sr. No	Topic	Total Hours	Weightage (%)	
1	Air pollution: Definition, sources and types of air pollution, effects of air pollution, measurement unit of air pollution, Ambient air quality standards, air quality indices, global and local level scenario of air pollution, Continues Environment Monitoring System	5	10	
2	Meteorology: Introduction, Role of meteorology in environmental engineering, types of lapse rates, stability conditions, wind velocity profile, maximum mixing depth, wind rose diagram, inversion, plume rise and plume behaviour	7	15	
3	Modelling of Dispersion of Air Pollutants : Wind Dispersion, Dispersion models, Gaussian Plume Equation with assumptions, Point source dispersion formula, other mathematical modeling for dispersion of air pollutants, determination of effective stack height	7	18	
4	Sampling and control methods for Particulate Pollution and Gaseous pollution: Atmospheric sampling and analysis for grit, dust, smoke, Sulphur dioxide, Carbon Monoxide, Hydrocarbon, Oxides of Nitrogen, Ozone, Types of Gaseous Pollution Control Methods – Absorption, Adsorption and Combustion Processes.	9	24	
5	Vehicular pollution: Vehicular Pollution, Emission Standards for Indian Context, Influencing Parameters for Vehicular Emissions, Remedial Measures, Catalytic Converters, Exhaust Gas Recirculation, Current Practices for Controlling Emissions	7	18	
6	Noise Pollution: Sources and Effects of Noise Pollution, Noise Emission and Immission, Measurement of Noise, Legislative Standards, Path and Receptors of Noise, Noise Barrier	7	15	

Reference Books:

1. Air Pollution by M. N. Rao Tata Mc-Graw Hill Publication
2. Air Pollution control Engineering by Noel de Nevers, Mc-Graw Hill Publication, New York.
3. Environmental Engineering by Peavy and Rowe, Mc-Graw Hill Publication
4. Environmental Engineering by Davis. Mc-Graw Hill Publication
5. Environmental Engineering Hand Book by Lee and Liptak Chilton Book Co., Philadelphia.
6. Rao C.S., Environmental pollution control Engineering, New age international Ltd, New Delhi, 1995.
7. Air Pollution and Control By K.V.S.G.Murali Krishna, Kindle Edition
8. Environmental Pollution Control Engineering by C. S. Rao, New Age International Publication
9. Control of Noise Pollution by N. S. Kamboj, Deep & Deep Publications
10. Noise Measurement and Control by Lord N Thomas, HEYWOOD & Company Ltd.
11. Noise Control in Industry by E. & F. N. Spon, Sound Research Laboratories Ltd.

List of Open Source Software/learning website:

- <http://elearning.vtu.ac.in/>
- www.nptel.iitm.ac.in/courses/

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Evaluate the impacts of air pollution on human, vegetation, and animal	L-5
CLO2	Prepare plan strategies to control and reduce air pollution	L-4
CLO3	Student should acquire knowledge related to the noise pollution and its control	L-3

L1- Remember, L2- Understand, L3- Apply, L4- Analyze, L5- Evaluate, L6- Create

Mapping of CLOs with POs & PSOs

	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
Course Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CLO1	M	M	M			M	M							M	M
CLO2	M	M	M	M		M	M							M	M
CLO3	M	M	M			M	M							M	M

H: High, M: Medium, L: Low