

EN503: Air Pollution Control

Teaching Scheme			Credits	Marks Distribution				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE	CE	ESE	CE	
4	0	2	6	70	30	30	20	150

Course Content:

Sr. No.	Topics	Teaching Hrs.
1	<p><u>Air Pollution:</u></p> <p>Sources, Types, Effects of air pollution on human, vegetation, material and properties. Units of measurement of Air Pollutant, Ambient Air quality and emission standards.</p>	06
2	<p><u>Meteorology:</u></p> <p>Introduction, factors, wind circulation, lapse rate, stability conditions, wind velocity profile, maximum mixing depth, wind rose diagram, turbulence, general characteristics of stack plumes. Heat island, Dust dome effect, Acid rain, Global warming.</p>	08
3	<p><u>Dispersion of Air Pollutants:</u></p> <p>Types of Dispersion models. Gaussian model: Introduction, Dispersion Equation for Point Source at GL. Effective Stack height.</p>	06
4	<p><u>Sampling Methods:</u></p> <p>Atmospheric sampling and analysis for grit, dust, smoke, Sulphur dioxide, Carbon Monoxide, Hydrocarbons, Oxides of Nitrogen. Stack sampling methods.</p>	02
5	<p><u>Particulate Pollution Control:</u></p> <p>Settling chambers, Cyclone separators, Scrubbers, Filters and Electrostatic precipitators.</p> <p>Gaseous pollution control: Absorption, Adsorption and Combustion processes.</p>	10

Types & Source of Automobile pollution, vehicle emission standard and fuel quality, inspection and certificate programme. IC engine- petrol base and diesel base, A/F ratio, Control: by process change, by engine design change, by fuel change. Catalytic converters.

Total Hrs. 40

Reference books:

1. Nevers N.D., "*Air Pollution Control Engineering*", Mc-Graw Hill Publication.
2. Rao M. N., "*Air Pollution*", Tata Mc-Graw Hill Publication.
3. Wark K and Warner C, "*Air Pollution*".
4. Boubel Richard W., "*Fundamentals of Air Pollution*", Academic Press, New York.
5. H. C. Perkins, "*Air Pollution*".
6. Peavy and Rowe, "*Environmental Engineering*", Mc-Graw Hill Publication.
7. Davis, "*Environmental Engineering*", Mc-Graw Hill Publication.
8. Lee and Liptak, "*Environmental Engineering*" Hand Book, Chilton Book Co., Philadelphia.
9. Crawford Marti, "*Air Pollution Control Theory*", Tata Mc-Grow Hill Publishing Company Ltd, New Delhi.