

AIR POLLUTION AND CONTROL TECHNOLOGY

MODULE-I: (10HOURS)

Air Pollution:

Sources of ambient and indoor air pollution; types of air pollutants, emission inventory, effects of air pollution in regional and global scale.

Air Quality Monitoring:

Objectives, ambient and indoor air sampling methods and devices, stack monitoring, CPCB guidelines for air quality monitoring, analysis of air pollutants and interpretation of air pollution data, air pollution standards and indices.

MODULE-II: (15 HOURS)

Atmospheric meteorology and dispersion of air pollutants:

Temperature lapse rates and atmospheric stability, inversions, wind profiles, wind velocity and turbulence, plume behaviour, estimation of plume rise, dispersion equations, box model, gaussian plume model.

Particulate matter and gaseous pollutants control technologies:

Control methods for air pollution, factors affecting selection of control equipment, working principle, design, operational considerations, process control and monitoring, costing and performance equations of particulate matter and gaseous air pollution control equipment.

MODULE-III: (15 HOURS)

Vehicular pollution and noise pollution:

Internal combustion engines, technological improvements of engines for reduction of vehicular emissions, after exhaust treatments, alternative transportation fuels, emission measurement and testing, regulation to control vehicular emission. Sources and effects of noise Pollution, measurement, standards, control and preventive measures.

Books recommended:

TEXT BOOKS:

1. Environmental Engineering- Peavy & Rowe. Prentice Hall Pub.

2. Air Pollution Control – Rao and Rao
3. Environmental Pollution and Control – C.S. Rao

REFERENCE BOOKS:

1. Noel de Nevers, Air Pollution Control Engineering, Mc Graw Hill, New York.
2. Arthur C. Stern, Air Pollution (Vol. I – Vol. VIII), Academic Press
3. Introduction to Environmental Engineering and Science, Gilbert M Masters
4. CPCB manual for Guidelines for ambient air quality monitoring. Published By: Dr. B. Sengupta, Member Secretary, Central Pollution Control Board