

# AMEV-14 AIR AND NOISE POLLUTION CONTROL

## OBJECTIVES:

To impart knowledge on the sources, effects and control techniques of air pollutants and noise pollution.

## UNIT I GENERAL

Atmosphere as a place of disposal of pollutants - Air Pollution - Definition - Pollution and Climate - of measurements pollutants - Air quality emission Global Units of criteria - standards - National ambient air quality standards - Air pollution indices - Air quality management in India.

## UNIT II SOURCES, CLASSIFICATION AND EFFECTS

Sources and classification of air pollutants - Man made - Natural sources - Type of air pollutants - Pollution due to automobiles - Analysis of air pollutants - Chemical, Instrumental and biological methods. Air pollution and its effects on human beings, plants and animals - Economic effects of air pollution - Effect of air pollution on meteorological conditions - Changes on the - Meso scale, Micro scale and Macro scale.

## SAMPLING, METEOROLOGY AND AIR QUALITY

## UNIT III MODELLING

and measurement of particulate and gaseous pollutants - Sampling Ambient air sampling Stack sampling. Environmental factors - Meteorology - temperature lapse rate and stability - Adiabatic lapse rate - Wind Rose - Inversion - Wind velocity and turbulence - Plume behaviour - Dispersion of air pollutants- Air Quality Modeling.

## UNIT

## IV AIR POLLUTION CONTROL MEASURES

Control Source correction methods - Control equipments - Particulate control methods - Bag house filter - Settling chamber - cyclone separators - inertial devices - Electrostatic precipitator - scrubbers - Control of gaseous emissions - Absorption - Absorption equipments - adsorption and combustion devices (Theory and working of equipments only).

## UNIT V NOISE POLLUTION AND ITS CONTROL

Sources of noise - Units and Measurements of Noise - Characterization of Noise from Construction, Mining, Transportation and Industrial Activities, Airport Noise - General Control Measures - Effects of noise pollution - auditory effects, non-auditory effects. Noise Menace- Prevention and Control of Noise Pollution - Control of noise at source, control of transmission, protection of exposed person - Control of other types of Noise Sound Absorbent

## OUTCOMES:

The students completing the course will have

an understanding of the nature and characteristics of air pollutants, noise pollution and basic concepts of air quality management  
ability to identify, formulate and solve air and noise pollution problems  
ability to design stacks and particulate air pollution control devices to meet applicable laws.

**TEXT BOOKS:**

- C. S. Rao, "Environmental Pollution Control Engineering", Wiley Eastern Limited, 2000.
- M. N. Rao, H. V. N. Rao, Air pollution, Tata McGraw Hill Pvt Ltd, New Delhi, 1-3
- Dr. Y. Anjaneyulu, "Air Pollution and Control Technologies", Allied publishers Pvt. Ltd., 2002.

**REFERENCES:**

- Noel De Nevers, "Air pollution control Engineering", McGraw Hill International Edition, McGraw Hill Inc, New Delhi, 2000.
- Air Pollution act, India, 1-81
- Peterson and E.Gross Jr., "Hand Book of Noise Measurement", 5<sup>th</sup> Edition, 1-63
- Mukherjee, "Environmental Pollution and Health Hazards", causes and effects, 1-86
- Antony Milne, "Noise Pollution: Impact and Counter Measures", [David & Charles PLC](#), 1-7-.
- 1 Kenneth wark, Cecil F.Warner, "Air Pollution its Origin and Control", Harper and Row Publishers, New York, 1-81.