

**III B. Tech – I Semester**  
**(20CE5415) AIR POLLUTION CONTROL**

Int. Marks	Ext. Marks	Total Marks	L	T	P	C
30	70	100	3	-	-	3

**Pre-Requisites:**

**Course Objectives**

The course will address the following:

- To know the analysis of air pollutants
- To know the Threshold Limit Values (TLV) of various air pollutants
- To acquire the design principles of particulate and gaseous control
- To learn plume behavior in different environmental conditions

**UNIT – I: Air Pollution:**

Definition of terms related to air pollution and control-Sources of air pollution-Primary and secondary pollutants – Indoor air pollution – Ozone holes and Climate Change.

**UNIT-II: Thermodynamics and Kinetics of Air-pollution:**

Applications in the removal of gases like SO<sub>x</sub>, NO<sub>x</sub>, CO and HC - Air-fuel ratio- Control of products of combustion, Automobile pollution. Odor pollution control

**UNIT – III: Meteorology and Air Pollution:**

Properties of atmosphere: Heat, Pressure, Wind forces, Moisture and relative Humidity, Lapse Rates - Influence of Terrain and Meteorological phenomena on plume behaviour and Air Quality - Wind rose diagrams and Isopleths- Plume Rise Models

**UNIT-IV: Ambient Air Quality Management:**

Monitoring of SPM - RPM SO<sub>2</sub>; NO<sub>x</sub> and CO - Stack Monitoring for flue gases – Noise Monitoring - Weather Station. Emission Standards- Impact of Air pollution on human health, animals and plants

**UNIT-V: Air Pollution Control:**

Control of particulates – Control at Sources, Process Changes, Equipment modifications, Design and operation of control Equipments – Settling Chambers, Cyclone separators –Fabric filters–Scrubbers, Electrostatic precipitates.

**Text Books:**

1. Air Pollution and Control, K.V.S.G. Murali Krishna, Laxmi Publications, New Delhi, 2015
2. Air Pollution, M. N. Rao and H. V. N. Rao, Tata McGraw Hill Company.

**References:**

1. An Introduction to Air pollution, R. K. Trivedy and P.K. Goel, B.S. Publications.
2. Air Pollution by Warkand Warner- Harper & Row, New York