III Year-I Semester
(20CE5428) Air Pollution Control
(Open Elective-I)

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

Pre- Requisites: Fundamentals of Environmental Studies

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 SOx, NOx, 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 behavior and Air Quality - Wind rose diagrams and Isopleths- Plume Rise Models

UNIT-IV:
Ambient Air Quality Management: Monitoring of SPM - RPM SO2; NOx 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 precipitators

Course Outcomes:

S.No	Course Outcomes	BTL
1	Identify sources of air pollution	L2
2	Control Automobile pollution and Odor pollution	L3
3	Find the plume behavior in a prevailing environmental condition	L4
4	Decide the ambient air quality based on the analysis of air pollutants	L5
5	Design particulate and gaseous control measures for an industry	L4

Correlation of COs with POs& PSOs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	3	3	2	3	3	2	3	3	2	3	2	3	3
CO2	3	1	2	3	1	2	3	1	2	3	1	2	1	2	3
CO3	3	3	1	3	3	1	3	3	1	3	3	1	3	1	3
CO4	3	2	1	3	2	1	3	2	1	3	2	1	2	1	2
CO5	3	3	1	3	3	1	3	3	1	3	3	1	3	1	3

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 Mc Graw Hill Company.

Reference Books:

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