

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.E. SEMESTER : V**  
**ENVIRONMENTAL SCIENCE & TECHNOLOGY**

**Subject Name: Air Pollution Control**

**Subject Code: 153504**

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam(E)	University Exam(P)	Mid Sem Exam(Theory) (M)	Practical (Internal)
3	0	2	5	70	0	30	50

Sr No	Course Contents
1	Air pollutants emerging from chemical and allied industry as well as through energy sector. Dispersion and cleaning by natural effects. Suspended solids and mutagens in air.
2	Influence of environmental factors on air pollution- Heat, insulation, wind, precipitation, mixing height and topography; Plume-behavior. Models for air pollution: Gaussian Plume model and Box model.
3	Mechanical operations in controlling air pollution. (Absorption, adsorptions, filtration etc.) Chemical methods of controlling air pollution (Absorption with chemical reactions, neutralization etc.). Catalytic processes. Biochemical processes. Photochemical processes, Design concepts of scrubbers, ESP, Gravity settlers ,cyclone separator, filter bags
4	Noise and odor control. Phenomena in smog generation. Legislation and norms of clean air. Effect of pollutants, human health and possible genetic effects.
5	Air pollution episodes- Bhopal, Chernobyl, Los Angeles and London smog, and Indonesian forest fire. Recent case studies on air pollution.

**REFERENCE BOOKS:**

1. Environmental Pollution Control and Engineering, Rao C.S., New Age International (P) Limited, 1<sup>st</sup> Ed., 1991.
2. Air Pollution, Perkin, H.G. McGraw Hill 1974.
3. Air Pollution. Physical and Chemical Fundamentals, Sainfeld, J.H. McGraw Hill, N.Y. 1975.
4. Air Pollution: Measurement, Modeling and Mitigation, A Tiwari and J Colls, Taylor & Francis, 2010
5. Sources and Control of Air Pollution, R J Heinsohn and R L Kabel, Prentice Hall, 1999
6. Air Pollution Control Equipment Calculations, L Theodore, John Wiley and Sons, 2008
7. Catalytic Air Pollution Control, Hack, Furraoto and Gulati, John Wiley and Sons, 2009