GUJARAT TECHNOLOGICAL UNIVERSITY
B.E. SEMESTER : VIII
CIVIL ENGINEERING

Subject Name: **AIR POLLUTION CONTROL**

Sr. No.	Course Contents	Total Hrs
1.	History of Air pollution and episodes, Sources of air pollution and types, Introduction to meteorology and transport of air pollution: Global winds, Headley cells, wind rose terrestrial wind profile, Effects of terrain and topography on winds, lapse rate, maximum mixing depths, plume rise	**9**
2.	Transport of Pollution in Atmosphere: Plume behaviour under different atmospheric conditions, Mathematical models of dispersion of air pollutants, Plume behaviour in valley and terrains. Plume behaviour under different meteorological conditions, Concept of isoplates	**10**
3.	Effects of Air Pollution on human beings, plants and animals and Properties. Global effects-Green house effect, Ozone depletion, heat island, dust storms, Automobile pollution sources and control, Photochemical smog, Future engines and fuels	**10**
4.	Air Pollution control- at source-equipments for control of air pollution-For particulate matter-Settling chambers-Fabric filters-Scrubbers-Cyclones-Electrostatic precipitators , For Gaseous pollutants-control by absorption-adsorption-scrubbers-secondary combustion after burners, Working principles advantages and disadvantages, design criteria and examples	**10**
5.	Air Quality Sampling and Monitoring: Stack sampling, instrumentation and methods of analysis of SO_2, CO etc, legislation for control of air pollution and automobile pollution	**9**

Note: Each module carries equal weightage
Term work: Tutorial problems based on above mentioned syllabus

Text Books:

1. H.C Parkins, Air Pollution Mc Graw Hill Publication
2. H.S. Peavy, D.R. Row & G. Tchobanoglous, Environmental Engineering, Mc Graw Hill International Edition
3. Martin Crawford, Air Pollution Control Theory, TMH Publ.