

Gautam Buddha University; Greater Noida

School of Engineering (Mechanical Engineering)

Degree	Course Name	Course Code	Marks:100
M. Tech.	Environmental Engineering & Pollution Control	MET 516	SM+MT+ET 25+25+50
Semester	Credits	L-T-P	Exam
II	3	3-0-0	3 Hours

Unit – I

Environment: Environmental segments; The natural cycles of environment; The hydrological cycle; The oxygen cycle; The nitrogen cycle; The phosphate cycle; The sulphur cycle; Atmospheric structure. **(07 Hours)**

Unit – II

Introduction to Pollution: Green house effect; Ozone hole; Pollution of air; Water and soil; Effect of pollution on living systems; Minimum national standards; Air pollution; Sources and classification of pollutants; Effect of air pollution; Pollution from industries; Chemical reactions in a contaminated atmosphere; urban air pollution; Acid rain; Photo chemical smog; Meteorological aspects of air pollution. **(08 Hours)**

Unit – III

Air Pollution Sampling and Measurement: Collection of gaseous air pollutants; Collection of particulate pollutants; Analysis of air pollutants; Sulphur-dioxide; Nitrogen oxides; Carbon monoxide; Oxidants and ozone; Hydro carbons and particulate matter. Air pollution control methods and equipment: Control methods; Source correction method; Cleaning of gaseous effluents; Particulate emission control; Control of specific gaseous pollutants SO₂; NO_x; Hydro carbons; CO. **(09 Hours)**

Unit – IV

Water Pollution and Control: Origin of waste water; Types of water pollutants and their effects; Water pollution laws and standards Waste water sampling and analysis ; Treatment of waste water. **(07 Hours)**

Unit – V

Solid Waste Management: Sources and classification of solid waste management; Public health aspects; methods of collection; Disposal methods; Potential methods of disposal. **(07 Hours)**

Unit – VI

Noise Pollution: Human acoustics; Perception of noise; Sound and its general features; Noise and its measurement; Noise pollution hazards & Controlling methods. **(07 Hours)**

Recommended Books:

1. Environmental Pollution Control Engineering; C. S. Rao; 2nd Edition; New age International; 2007.
2. Air Pollution; M. N. Rao and H. V. N. Rao; 1st Edition; Tata Mc Graw Hill; 1989.
3. Pollution Control in Process Industries; S. P. Mahajan; 1st Edition; Tata Mc Graw Hill; 1985.
4. Energy Technology; S. Rao and B. B. Parulekar; Khanna publishers; 1991.
5. Noise Pollution; S. K. Agarwal; APH Publishing corporation; 1st Edition; 2009.