

Course Code and Title : PGEVS3C002T, Environmental Pollution and Control
 Credit Hours : 04
 Total Number of Lectures : 60
 Course Teachers : Prof. Deepak Pathania & Dr. Pankaj Mehta

Teaching Plan:

Topic	No. of Lectures	Teacher
UNIT-I: INTRODUCTION		
Air Pollution: Types, sources and classification of air pollutants;	1	Prof. Deepak Pathania
Gaseous pollutants and particulate matter (PM ₁₀ , PM _{2.5}).	1	Prof. Deepak Pathania
Air pollution due to automobile: sources, emissions from gasoline, Petrol and diesel powered vehicles exhaust emission	2	Prof. Deepak Pathania
Effect of air pollution on plants, animals and human health, General methods of control of gaseous pollutants-scrubbers, condensers	3	Prof. Deepak Pathania
Control equipment for particulate matter-gravity settling chambers,	2	Prof. Deepak Pathania
Cyclone, fabric filters, electrostatic precipitators, Hybrid filter (combination of ESP and Bag house)	2	Prof. Deepak Pathania
Control of automobile sources of emissions	1	Prof. Deepak Pathania
UNIT-II: WATER POLLUTION		
Water Pollution: Types, sources and classification	2	Dr. Pankaj Mehta
Industrial effluents characteristics of effluents from different industries (pulp and paper mills, oil exploration and refinery)	2	Dr. Pankaj Mehta
Water quality standards proposed by national and international agencies	1	Dr. Pankaj Mehta
Estuarine pollution & marine pollution	2	Dr. Pankaj Mehta
Eutrophication – causes, effects and control measures	1	Dr. Pankaj Mehta
Waste water characteristics-Domestic waste water, Sewage treatment: preliminary, primary, secondary and tertiary treatment	3	Dr. Pankaj Mehta
Process description of aerobic and anaerobic processes.	2	Dr. Pankaj Mehta
Upflow Anaerobic Sludge Bed reactor (UASB)	1	Dr. Pankaj Mehta
UNIT-III: NOISE AND RADIOACTIVE POLLUTION		
Noise Pollution: types, sources,	5	Prof. Deepak Pathania

consequences; measurement of noise pollution, threshold hearing level and abatement measures		
Radio-active Pollution: types, sources and consequences	2	Prof. Deepak Pathania
Biological effects of ionizing radiation's: the interactions of radiation's with cells – various stages, somatic and genetic effect; maximum permissible dose	3	Prof. Deepak Pathania
Parameters affecting the radiation monitoring - personal monitoring equipment's; Disposal and management of radioactive waste	3	Prof. Deepak Pathania
UNIT-IV: SOIL POLLUTION		
Sources of soil pollution: industrial effluents, fertilizers, pesticides, heavy metals and waste disposal	3	Dr. Pankaj Mehta
Effects of soil pollutants on flora , fauna and ground water	2	Dr. Pankaj Mehta
Solid-waste Pollution: types, sources and consequences	2	Dr. Pankaj Mehta
Waste management practices	2	Dr. Pankaj Mehta
Unit-V: THERMAL OIL and E-WASTE POLLUTION		
Thermal pollution : sources, impact and control	2	Dr. Pankaj Mehta
Oil pollution ;sources of oil spillage and impact, factors effecting fate of oil spillage	3	Dr. Pankaj Mehta
E-waste : generation, sources, types and constituents	2	Dr. Pankaj Mehta
Environmental consequences and management of E-waste	3	Dr. Pankaj Mehta
Bio indicators of Pollution	2	Dr. Pankaj Mehta

REFERENCE BOOKS:

1. Introduction to Environmental Engineering and Science- Gilbert M Masters.
2. Environmental Engineering –Peavy and Rowe. McGraw Hill.
3. Environmental Engineering-Gerard Kiely (Tata McGraw-Hill Publishing Company
4. De, A. K. Environmental Chemistry. New age International (P) Ltd., New Delhi, India.2000
5. Baird, S.K. Environmental Chemistry. W. H. Freeman & Co.