

Course Code	Course Name	L-T-P-Credits	Year of Introduction
CE371	Environment and Pollution	3-0-0-3	2016

**Prerequisites: Nil**

**Course objectives:**

- To understand the various types of environmental and industrial pollution, pollutants, related diseases and their causes
- To impart the various management techniques available for pollution abatement

**Syllabus**

Pollution, Environmental and industrial, Types. Air pollution-sources, effects, types of pollutants. Water pollution, characteristics of water pollutants, water borne diseases, water quality standards. Solid wastes, sources, types, control methods, soil pollution, urbanization, land degradation, pesticide pollution. Noise pollution, sources, effects, control measures, industrial pollution, occupational health hazards, industrial hygiene

**Expected Outcomes:**

- To have a basic knowledge of various pollution sources and their effects
- To have an awareness of the various methods of prevention and reduction of pollutant

**Text Books / References:**

1. B.C.Bhartia, Environmental Pollution and Control in Chemical Process Industries, Khanna Publishers, Delhi, 2001.
2. Danny D Reible, Fundamentals of Environmental Engineering, CRC Press, 1998
3. Gilbert M Masters, Wendell P Ela, Introduction to Environmental Engineering and Science, Pearson Education, 2007
4. Howard S Peavy, Donald R Rowe, George Tchobanoglous, Environmental Engineering, McGrawHill Education , 1984
5. Kurian Joseph & R.Nagendran, Essentials of Environmental Studies, Pearson Education (Singapore) Pvt.Ltd, New Delhi, 2004.
6. N.N Basak, Environmental Engineering, McGrawHill Education, Reprint 2015
7. P.ArneVesiland, Introduction to Environmental Engineering, PWS publishing company Boston, 1997.
8. Suresh K Dhameja, Environmental Engineering and Management, S.K.Kataria& Sons, Delhi, 2010.

**COURSE PLAN**

Module	Contents	Hours	Sem. Exam Marks %
I	Environment-Introduction-Multidisciplinary Nature Components of Environment, Ecology, Ecosystem- Material Cycling- Carbon and Nitrogen cycles Introduction: Classification of Pollution and Pollutants of environment, Pollution related Diseases, Basic requirements for healthy environment	6	15

II	Air Pollution: Primary and Secondary Pollutants, Industrial Pollution, Ambient Air Quality Standards, Types of air pollutants-sulfur dioxide, nitrogen dioxide, carbon monoxide, particulate matter. Effects of air pollutants on human, vegetation and environment	6	15
<b>FIRST INTERNAL EXAMINATION</b>			
III	Water Pollution: Point and Non-point Source of Pollution, Major Pollutants of Water, Physical, chemical and biological characteristics of water , Water borne diseases, Water Quality standards	7	15
IV	Solid Waste: Classification of Solid Waste, Composition and Characteristics of Solid Waste, Plastic wastes; Segregation of Solid waste, recycling and reuse of solid wastes, E-waste: Sources of generation,.	7	15
<b>SECOND INTERNAL EXAMINATION</b>			
V	Land/Soil Pollution: Effects of urbanization on land degradation, Impact of Modern Agriculture on Soil, pesticide pollution, Effect on Environment and Life sustenance, Abatement measures	8	20
VI	Noise pollution: Sources of Noise, Effects of Noise, measurement of noise, Equivalent sound pressure level, Control measures	8	20
<b>END SEMESTER EXAMINATION</b>			

### QUESTION PAPER PATTERN (End semester examination)

**Maximum Marks :100**

**Exam Duration: 3 Hrs**

Part A -Module I & II : 2 questions out of 3 questions carrying 15 marks each

Part B - Module III & IV: 2 questions out of 3 questions carrying 15 marks each

Part C - Module V & VI : 2 questions out of 3 questions carrying 20 marks each

**Note :** 1.Each part should have at least one question from each module

2.Each question can have a maximum of 4 subdivisions (a,b,c,d)

