

IV Year I Semester

L T P C

Code: 17CE742

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**ENVIRONMENTAL POLLUTION CONTROL  
(Open Elective-I)**

**Course Learning Objectives:**

**The objective of this course is:**

1. Impart knowledge on fundamental aspects of air pollution & control, noise pollution, and solid waste management.
2. Provide basic knowledge on sustain able development.
3. Introduces some basics of sanitation methods essential for protection of community health.
4. Differentiate the solid and hazardous waste based on characterization.

**Course Learning Outcomes:**

By the end of successful completion of this course, the students will be able to:

- Identify the air pollutant control devices
- Have knowledge on the NAAQ standards and air emission standards
- Differentiate the treatment techniques used for sewage and industrial waste water treatment methods.
- Understand the fundamentals of solid waste management, practices adopted in his town/village and its importance in keeping the health of the city.
- Appreciatethemethodsofenvironmentalsanitationandthemanagementofcommunityfacilitie s without spread of epidemics.
- Appreciate the importance of sustain able development while planning a project or executing an activity.

**UNIT-I**

**Air Pollution:** Air pollution Control Methods–Particulate control devices–Methods of Controlling Gaseous Emissions–Air quality standards.

**Noise Pollution:** Noise standards, Measurement and control methods–Reducing residential and industrial noise – ISO14000.

**UNIT-II**

**Industrial wastewater Management:** – Strategies for pollution control –Volume and Strength reduction–Neutralization–Equalization–Proportioning–Common Effluent Treatment Plants-Recirculation of industrial wastes–Effluent standards.

**UNIT- III**

**Solid Waste Management:** solid waste characteristics – basics of on-site handling and collection–separation and processing-Incineration-Composting-Solid waste disposal methods–fundamentals of L and filling.

#### **UNIT-IV**

**Environmental Sanitation:** Environmental Sanitation Methods for Hostels and Hotels, Hospitals, Swimming pools and public bathing places, social gatherings (melas and fares), Schools and Institutions, Rural Sanitation-low cost waste disposal methods.

#### **UNIT-V**

**Hazardous Waste:** Characterization - Nuclear waste – Biomedical wastes –Electronic wastes- Chemical wastes–Treatment and management of hazardous waste-Disposal and Control methods.

#### **UNIT- VI**

**Sustain able Development:** Definition-elements of sustain able developments-Indicators of sustain able development-Sustain ability Strategies-Barriers to Sustain ability–Industrialization and sustain able development – Cleaner production in achieving sustainability- sustain able development.

#### **TEXTBOOKS:**

1. Environmental Engineering, by Ruth F. Weiner and Robin Matthews–4th Edition Elsevier, 2003.
2. Environmental Science and Engineering by J.G. Henry and G.W. Heinke–Pearson Education.
3. Environmental Engineering by Mackenzie L Davis & David A Cornwell. McGraw Hill Publishing.

#### **REFERENCES:**

1. Air Pollution and Control by M.N.Rao & H.N.Rao
2. Solid Waste Management by K.Sasi Kumar, S.A.Gopi Krishna. PHI New Delhi.
3. Environmental Engineering by Gerard Kiley, Tata McGraw Hill.
4. Environmental Sanitation by KVSG Murali Krishna, Reem Publications, New Delhi.
5. Industrial Water Pollution Control by Nemerow Jr., McGraw Hill Publishing.
6. Unit Operations and Processes in Environmental Engineering by Reynolds. Richard – Cengage Learning.
7. Environmental Engineering by D. Srinivasan, PHI Learning Private Limited, New Delhi, 2011.
8. Environmental Engineering – Howard S. Peavy, Donald R. Rowe, George George Tchobanoglous–Mc-Graw-Hill Book Company, New Delhi, 1985.