

**CORE COURSE - XV (CC): ENVIRONMENTAL ENGINEERING,  
CONSERVATION MANAGEMENT**

**UNIT 1:**

Water quality standards (ISI). Water purification processes in natural and Engineered Systems. Water Supply \_ Design and layout of water distribution systems. Ground water recharge, Watershed: Concept, characteristics and types, Land development, water investigation and watershed management.

**UNIT 2:**

Wastewater Treatment - Primary, Secondary and advanced treatment: Classification and application of physical Unit processes with principles and process analysis, Design and layout of Industrial and Municipal wastewater treatment systems, Wastewater Disposal and Reuse.

**UNIT 3:**

Air Pollution control - control by dilution, its limitations, control by process changes, control by engineered systems for fixed sources. Control of particulate emissions - settling chambers, centrifugal collectors, wet collectors, fabric filters and Electrostatic precipitators, their principles, techniques and devices. Control of gaseous contaminants - Adsorption and Absorption techniques. Condensation and combustion techniques. Control of Automobile emissions. Noise pollution control-control at source, along sound transmission path and at receiver.

**UNIT 4:**

Principles and methods of solid waste collection, treatment and disposal - Land filling, composting and incineration techniques. Recovery and recycling of useful solid wastes control measures for soil erosion and land reclamation. Causes of flood and its control. Fertilizer management: Chemical and Biofertilizers, benefits of biofertilizers. Pest management, Chemical control methods, rational use of biocides, and biological and integrated control.

**UNIT 5:**

Forest types - Tropical evergreen and semi-evergreen forests in India, Dry deciduous and dry evergreen forests, grassland, vegetation survey, optimum exploitation, deforestation and its impact. Afforestation - Social and agroforestry schemes. Forest fire-prevention, control and suppression, Wildlife in India - Animals and birds, endangered species, conservation of wildlife, Sanctuaries and National parks. Environmental law; legislative measure for the control of environmental pollution and conservation of Biodiversity.

## REFERENCES:

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2. Duggal,K.N.1998.Elements of Environmental Engg..Chand and company Ltd.,New Delhi.
3. Kapoor,S.1997. Environmental Engineering. Khanna publishers,Delhi.
4. Krishnamurthy, K.V. 2004. An Advanced textbook on biodiversity, Principles and practice. Oxford & IBH Publishing Co., New Delhi.
5. Masters ,G.M. 1991.Introduction Environmental Engineering and Science. Prentice-Hall of India Pvt. Ltd., New Delhi.
6. Metcalf and Eddy.Waster water Engineering. McGraw Hill Publishing Co., New York.
7. Peavy, H.S. Rowe D.R.and Tchobanoglous,G. 1986. Environmental Engineering. McGraw Hill Book Co., New York.
8. Pollution control legislations.Vol I and II Tamil nadu pollution control Board, Chennai.
9. Rangwala,S.C, K.S.Rangwala and P.S.Rangwala. 1997. Water supply and sanitary engineering, Charotar publicating house, Anand.
10. Rao, C.S. 1991. Environmental Pollution Control Engineering .Wiley Eastern Ltd., New Delhi.
11. Trivedy, R.K. 1994. Pollution Management in industries . Enviromedia, Karad.