Course Type	Course Code	Name of the course	L	Т	Р	Credit
DC	CEC202	Environmental Engineering	3	0	0	9

Course Objective								
This course is to provide an understanding on water chemistry, principles of water treatment processes and to comprehend the essential concepts of air, noise pollution and solid waste management.								
Learning Outcomes								
After studying this course, students should be able to:								
 Get an insight into the structure of drinking water supply systems, water collection, water purification and water supply scheme. Understand the basics of sewage treatment and solid waste management systems. Understand the fundamental aspects of air and noise pollution. 								
Unit No.	Topics to be Covered	Lectures	Learning Outcome					
1	Introduction, Physical, Chemical and Biological water quality parameters, Water quality requirements for different uses	7	Understand the water quality parameters					
2	Principles of water supply engineering, Types of water demand, factors affecting water demand, variations in water demand. Design periods and design population	3	Understand the fundamental principles of design of water supply systems					
3	Overview of water treatment processes, Solids separation, settling operations, Coagulation, softening, Filtration, Disinfection	15	Understand the various unit operations for the water treatment.					
4	Primary and Secondary treatment of Wastewater, Sludge treatment and disposal	5	Understand the wastewater treatment processes					
5	Basics of Solid Waste Management: Sources of Solid waste, Classification, Engineered systems for collection, recycling and reuse of solid waste Introduction to air pollution, Classification of air pollutant, Atmospheric meteorology, Prediction of pollutant concentration, Control methods for particulate and gaseous pollutant. Introduction to noise pollution, effect of noise pollution, levels of noise, noise rating system and noise abatement and control.	9	Understand the basics of solid waste management systems, air pollution and noise pollution.					
6	Overview and design of Distribution Systems, Layouts of distribution network, Methods of Distribution	3	Understand the design of water distribution systems					

Recommended Text Books:

- 1. Environmental Engineering (2013 ed.)-Peavy and Rowe, McGraw Hill India.
- 2. Environmental Engineering-II, S K Garg, Khanna Publishers, India

Recommended References

- 1. Environmental Engineering-I, (33rd ed.)- S K Garg, Khanna Publishers, Delhi.
- 2. Theory and practice of water and wastewater treatment (2009)-Textbook by Ronald L. Droste, Willey