

Session: 2020-2021

Course: B.Tech.

Department: Civil Engineering

Semester: 5TH

Subject: Water Supply & Treatment, PCC-CE-303-G

Faculty name: Mr. Ankit Sharma

LECTURE PLAN

WEEK	LECTURE	TOPIC
1 st	1 st	Water Supply System – Planning, Objectives, Design Period, Population Forecasting
	2 nd	Population Forecasting, Water Demands and its Variations
2 nd	1 st	Sources of Water and their Characteristics, Development and Selection of Source, Intakes and their Types
	2 nd	Sources of Impurities, Type of Impurities in Water and their Sanitary Significance
3 rd	1 st	Physical, Chemical and Bacteriological Analysis of Water
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4 th	1 st	Indian and Global Standards of Water Quality, Effluent Standards
	2 nd	Necessity of Water Treatment , Flow Diagram of Different Treatment Units; Constructional Details
5 th	1 st	Working and Operation of Preliminary Units, Aeration Units, Sedimentation Units and their Types
	2 nd	Features and Design Aspects; Mixing Basins, Flocculation
6 th	1 st	Filtration – Mechanisms, Characteristics and Design of Slow and Rapid Sand Filtration Unit
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7 th	1 st	Disinfection - Theory, Methods and Practices
	2 nd	Water Softening, Desalination- R.O. Plant, Demineralization
8 th	1 st	Adsorption, Ion Exchange, Membrane Systems
	2 nd	Iron and Manganese Removal, Defluoridation, Dissolved Solids Removal
9 th	1 st	Methods of Supply - Intermittent and Continuous
	2 nd	Pipes and Conduits for Water- Pipe Materials, Laying, Jointing and Testing of Pipes
10 th	1 st	Valves and Appurtenances
	2 nd	Need of Pumping, Terminology used, Classification of Pumps, Different Type of Pumps used in Water Supply
11 th	1 st	Power of Pumping, Total Lift of Pump, Location of Pumping Station, and Site Selection

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12 th	1 st	Requirements of Water Distribution, Type of Distribution System, Layout of Distribution System – Dead End System, Grid Iron System, Ring System, Radial System and their Merits and Demerits
	2 nd	Requirements of Water Distribution, Type of Distribution System, Layout of Distribution System – Dead End System, Grid Iron System, Ring System, Radial System and their Merits and Demerits
13 th	1 st	Distribution Reservoir-Functions and Determination of Storage Capacity
	2 nd	Water Distribution Network- Layout, Capacity, Pressure Requirements, Analysis
14 th	1 st	Leak Detection and Maintenance of Water Distribution Network
	2 nd	Sources of Water Pollution, Types and their Effects
15 th	1 st	Preventive Measures and Control of Water Pollution
	2 nd	Description of Legislation Related to Water Pollution Control