

CE2304 – ENVIRONMENTAL ENGINEERING I

SUBJECT DESCRIPTION AND OBJECTIVES

The subject description it deals with

- Planning of water supply system
- Selection of source and development
- Source of water and their characteristics
- Conveyance system of water
- Functions of intake structures
- Types and capacity of pumps
- Different types of pipe materials

- **OBJECTIVES**
- Unit operation and processes
- Advanced water supply system
- Membrane system
- Construction & operation and maintenance aspect of water treatment plants
- Water distribution and supply to buildings
- Requirements of water distribution
- Computer applications of water distribution.

MICRO LESSON PLAN

Week	Hrs	Lecture Topics	Book
UNIT I PLANNING FOR WATER SUPPLY SYSTEM			
I	1	Public water supply system	TEXT BOOK 1
	2	Planning, objectives and design period	
	3	Population forecasting	
	4	Water demand, sources of water and their characteristics	
	5	Surface and ground water (AV CLASS)	
II	6	Impounding reservoir and well hydraulics	
	7	Development and selection of source	
	8	Water quality characterization	
	9	Water quality standards.	
UNIT II CONVEYANCE SYSTEM			
III	10	Water supply & Intake structures	TEXT BOOK 1
	11	Functions and drawings (AV CLASS)	
	12	Pipes and conduits for water	
	13	Pipe materials and hydraulics of flow in pipes	
	14	Transmission main design	
IV	15	Laying , jointing and testing of pipes	
	16	Drawing appurtenances	
	17	Types and capacity of pumps	
	18	Selection of pumps and pipe materials	
UNIT III WATER TREATMENT			
V	19	Objectives of water treatment	TEXT BOOK 1
	20	Unit operations and processes	
	21	Principles, functions, design and drawings of flash mixtures	
	22	Flocculators (AV CLASS)	
	23	Sedimentation tanks	
VI	24	Sand filters	
	25	Sand filters	
	26	Disinfection	
	27	Residue management	

UNIT IV ADVANCED WATER TREATMENT			
VII	28	Aerator	TEXT BOOK 1
	29	Iron and manganese removal	
	30	Defluoridation and demineralization	
	31	Water softening (AV CLASS)	
	32	Desalination	
VIII	33	Membrane systems	
	34	Construction & operation and maintenance aspect of water treatment plants	
	35	Recent advances water treatment	
	36	Membrane processes	
UNIT V – WATER DISTRIBUTION AND SUPPLY TO BUILDING			
IX	37	Requirements of water distribution	TEXT BOOK 1
	38	Components of service reservoir	
	39	Functions and drawings (AV CLASS)	
	40	Net work design	
	41	Economics and computer applications	
X	42	Analysis of distribution net works	
	43	Appurtenances, operation & maintenances	
	44	Leak detection methods, principles of water supply in buildings, house service connection and fixtures and fittings	
	45	Systems of plumbing and drawings of types of plumbing	

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