

Lesson Plan

Subject: - WS& WWE **Code-(TH.4)** **Name of faculty:-Subhashree Jena**
Semester:-5th **Class allotted -5p/w** **Branch: - Civil engg.** **Session: 2025(w)**

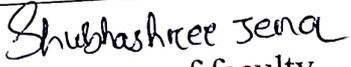
Discipline	Semester:-5 th	From date:- 14/07/2025 TO 15/11/2025	Teaching Aid
Subject:	No. of days/ per week 5p/w :	Theory/ Practical –Topics/Lesson	
Week	Date/Period		

1	15/07/2025 TO 19/07/2025	SECTION A: WATER SUPPLY 1 Introduction to Water Supply, Quantity and Quality of water 1.1 Necessity of treated water supply 1.2 Per capita demand, variation in demand and factors affecting demand	White board & marker
2	21/07/2025 TO 26/07/2025	1.3 Methods of forecasting population, Numerical problems using different methods 1.4 Impurities in water – organic and inorganic, Harmful effects of impurities 1.5 Analysis of water –physical, chemical and bacteriological 1.6 Water quality standards for different uses	White board & marker
3	28/07/2025 TO 02/08/2025	2 Sources and Conveyance of water 2.1 Surface sources – Lake, stream, river and impounded reservoir 2.2 Underground sources – aquifer type & occurrence – Infiltration gallery, infiltration well, springs, well 2.3 Yield from well- method s of determination, Numerical problems using yield formulae (deduction excluded) 2.4 Intakes – types, description of river intake, reservoir intake, canal intake	White board & marker
4	04/08/2025 TO 09/08/2025	2.5 Pumps for conveyance & distribution – types, selection, installation. 2.6 Pipe materials – necessity, suitability, merits & demerits of each type 2.7 Pipe joints – necessity, types of joints, suitability, methods of jointing Laying of pipes – method	White board & marker
5	11/08/2025 TO 16/08/2025	3 Treatment of water <i>Note:</i> 1. Design of treatment units excluded. 2. Students may be asked to prepare detailed sketches of units, preferably from working drawing, as home assignment 3. Field visit to treatment plant, under practical should be arranged after covering this unit. 3.1 Flow diagram of conventional water treatment system 3.2 Treatment process / units	White board & marker
6	18/08/2025 TO 23/08/2025	3.2.1 Aeration ; Necessity 3.2.2 Plain Sedimentation : Necessity, working principles, Sedimentation tanks – types, essential features, operation & maintenance	White board & marker

		<p>3.2.3 Sedimentation with coagulation: Necessity, principles of coagulation, types of coagulants, Flash Mixer, Flocculator, Clarifier (Definition and concept only)</p> <p>3.2.4 Filtration : Necessity, principles, types of filters</p> <p>Slow Sand Filter, Rapid Sand Filter and Pressure Filter – essential features</p> <p>3.2.5 Disinfection : Necessity, methods of disinfection</p> <p>Chlorination – free and combined chlorine demand, available chlorine, residual chlorine, pre-chlorination, break point chlorination, super-chlorination</p> <p>3.2.6 Softening of water – Necessity, Methods of softening – Lime soda process and Ion exchange method (Concept Only)</p>	
7	25/08/2025 TO 30/08/2025	<p>4 Distribution system And Appurtenance in distribution system:</p> <p>4.1 General requirements, types of distribution system-gravity, direct and combined</p> <p>4.2 Methods of supply – intermittent and continuous</p> <p>4.3 Distribution system layout – types, comparison, suitability</p> <p>4.4 Valves-types, features, uses, purpose-slucce valves, check valves, air valves, scour valves, Fire hydrants, Water meters</p>	White board & marker
8	01/09/2025 TO 06/09/2025	<p>5 W/s plumbing in building :</p> <p>5.1 Method of connection from water mains to building supply</p> <p>5.2 General layout of plumbing arrangement for water supply in single storied and multi-storied building as per I.S. code.</p>	White board & marker
9	08/09/2025 TO 13/09/2025	<p>SECTION B: WASTE WATER ENGINEERING</p> <p>6 Introduction</p> <p>6.1 Aims and objectives of sanitary engineering</p> <p>6.2 Definition of terms related to sanitary engineering</p>	White board & marker
10	15/09/2025 TO 20/09/2025	<p>6.3 Systems of collection of wastes– Conservancy and Water Carriage System – features, comparison, suitability</p> <p>7 Quantity and Quality of sewage</p> <p>7.1 Quantity of sanitary sewage – domestic & industrial sewage, variation in sewage flow, numerical problem on computation quantity of sanitary sewage.</p>	White board & marker
11	22/09/2025 TO 27/09/2025	<p>7.2 Computation of size of sewer, application of Chazy's formula, Limiting velocities of flow : self-cleaning and scouring</p> <p>7.3 General importance, strength of sewage, Characteristics of sewage-physical, chemical & biological</p> <p>7.4 Concept of sewage-sampling, tests for – solids, pH, dissolved oxygen, BOD, COD</p>	White board & marker

	08/10/2025 TO 11/10/2025	8 Sewerage system 8.1 Types of system-separate, combined, partially separate, features, comparison between the types, suitability 8.2 Shapes of sewer – rectangular, circular, avoid-features, suitability 8.3 Laying of sewer-setting out sewer alignment	White board & marker & smart board
13	13/10/2025 TO 18/10/2025	9 Sewer appurtenances and Sewage Disposal: 9.1 Manholes and Lamp holes – types, features, location, function 9.2 Inlets, Grease & oil trap – features, location, function 9.3 Storm regulator, inverted siphon – features, location, function	White board & marker
14	20/10/2025 TO 25/10/2025	9.4 Disposal on land – sewage farming, sewage application and dosing, sewage sickness-causes and remedies 9.5 Disposal by dilution – standards for disposal in different types of water bodies, self purification of stream	White board & marker
15	27/10/2025 TO 01/11/2025	10 Sewage treatment 10.1 Principles of treatment, flow diagram of conventional treatment 10.2 Primary treatment – necessity, principles, essential features, functions 10.3 Secondary treatment – necessity, principles, essential features, functions	White board & marker & smart board
16	03/11/2025 TO 08/11/2025	11 Sanitary plumbing for building : 11.1 Requirements of building drainage, layout of lavatory blocks in residential buildings, layout of building drainage	White board & marker
17	10/11/2025 TO 15/11/2025	11.2 Plumbing arrangement of single storied & multi storied building as per I.S. code practice 11.3 Sanitary fixtures – features, function, and maintenance and fixing of the fixtures – water closets, flushing cisterns, urinals, inspection chambers, traps, anti-syphonage pipe	White board & marker


Signature of HOD


Signature of faculty