

LESSON PLAN (WINTER-2022)			
Discipline- Civil Engineering		Semester-5 th (3 rd Year)	
Semester from Date- 15.09.22 to 22.12.2022		No of weeks-15	
No of classes allotted(hours/week)-05		Total Period-75	
Subject- WATER SUPPLY AND WASTE WATER ENGINEERING			Subject Code-Th. 04
Name of the Teaching Faculty-SUDHASHREE MUNDA			
WEEK	DATE/ CLASS DAY	PERIOD AVAILABLE	TOPICS TO BE COVERED
SECTION A-WATER SUPPLY			
1 st	16.09.22	01	Briefing about the syllabus, Introduction to the subject ,it's objective and practical application of it. Mark distribution, reference book etc. <u>Chapter-1</u> <u>Introduction to Water Supply, Quantity and Quality of water</u> ~Necessity of treated water supply,
	17.09.22	01	~per capita demand, variation in demand and factors affecting demand.
2 nd	20.09.22	01	~Methods of forecasting population, Numerical problems using different methods ,
	21.09.22	02	~Impurities in water – organic and inorganic, Harmful effects of impurities .
	23.09.22	01	~Analysis of water –physical, chemical and bacteriological ,
	24.09.22	01	~Water quality standards for different uses .
3 rd	27.09.22	01	Revision of Chapter-01
	28.09.22	02	<u>Chapter-2</u> <u>Sources and Conveyance of water</u> ~Surface sources – Lake, stream, river and impounded reservoir
	30.09.22	01	~Underground sources – aquifer type & occurrence – Infiltration gallery, infiltration well springs, well
	01.10.22	01	~ Yield from well- method s of determination, Numerical problems using yield formulae (deduction excluded) . Intakes – types, description of river intake, reservoir intake, canal intake
4 th	07.10.22	01	~ Pumps for conveyance & distribution – types, selection, installation. Pipe materials – necessity, suitability, merits & demerits of each type .
	08.10.22	01	~ Pipe joints – necessity, types of joints, suitability, methods of jointing . Laying of pipes – method
5 th	11.10.22	01	Revision of Chapter-2
	12.10.22	02	<u>Chapter-3</u> <u>Treatment of water</u> ~Flow diagram of conventional water treatment system
	14.10.22	01	~ Treatment process / units : Aeration ; Necessity
	15.10.22	01	~ Plain Sedimentation : Necessity, working principles, Sedimentation tanks – types, essential features, operation & maintenance
6 th	18.10.22	01	~ Sedimentation with coagulation: Necessity, principles of coagulation, types of coagulants, Flash Mixer, Flocculator, Clarifier (Definition and concept only)
	19.10.22	02	~ Filtration : Necessity, principles, types of filters Slow Sand Filter, Rapid Sand Filter and Pressure Filter – essential features
	21.10.22	01	~ Disinfection : Necessity, methods of disinfection
	22.10.22	01	~ Chlorination – free and combined chlorine demand, available chlorine, residual chlorine, pre-chlorination, break point chlorination, super-chlorination
7 th	25.10.22	01	~Softening of water – Necessity, Methods of softening – Lime soda process and Ion exchange method (Concept Only)

	26.10.22	02	Revision of Chapter-3
Monthly Class test for October -2022(27.10.2022)			
	28.10.22	01	<u>Chapter-4</u> <u>Distribution system And Appurtenance in distribution system:</u> ~General requirements, types of distribution system-gravity, direct and combined
	29.10.22	01	~ Methods of supply – intermittent and continuous
8 th	01.11.22	01	~ Distribution system layout – types, comparison, suitability
	02.11.22	02	~Valves-types, features, uses, purpose-slucie valves, check valves, air valves, scour valves, Fire hydrants, Water meters
	04.11.22	01	Revision of Chapter-4
SECTION B: WASTE WATER ENGINEERING			
	05.11.22	01	<u>Chapter-6</u> <u>Introduction</u> ~ Aims and objectives of sanitary engineering
9 th	09.11.22	02	~ Definition of terms related to sanitary engineering
	11.11.22	01	~ Systems of collection of wastes- Conservancy and Water Carriage System – features, comparison, suitability
	12.11.22	01	Revision of Chapter-6
10 th	15.11.22	01	<u>Chapter-7</u> <u>Quantity and Quality of sewage</u> ~Quantity of sanitary sewage – domestic & industrial sewage, variation in sewage flow, numerical problem on computation quantity of sanitary sewage.
	16.11.22	02	~Computation of size of sewer, application of Chazy's formula, Limiting velocities of flow : self-cleaning and scouring
Internal Assessment-3rd week of November 2022 (16.11.22 & 17.11.22)			
	18.11.22	01	~General importance, strength of sewage, Characteristics of sewage-physical, chemical & biological
	19.11.22	01	~Concept of sewage-sampling, tests for – solids, pH, dissolved oxygen, BOD, COD
11 th	22.11.22	01	Revision of Chapter 7
	23.11.22	02	<u>Chapter-8</u> <u>Sewerage system</u> ~Types of system-separate, combined, partially separate , features, comparison between the types, suitability
	25.11.22	01	~Shapes of sewer – rectangular, circular, avoid-features, suitability , Laying of sewer-setting out sewer alignment
	26.11.22	01	Revision of Chapter-8
Monthly Class test for November-2022(28.11.2022)			
SECTION A-WATER SUPPLY			
12 th	29.11.22	01	<u>Chapter-5</u> <u>W/s plumbing in building :</u> ~ Method of connection from water mains to building supply
	30.11.22	02	~ General layout of plumbing arrangement for water supply in single storied and multi-storied building as per I.S. code., Revision of Chapter-5.

SECTION B: WASTE WATER ENGINEERING

	02.12.22	01	<u>Chapter-9</u> <u>Sewer appurtenances and Sewage Disposal</u> ~ Manholes and Lamp holes – types, features, location, function
	03.12.22	01	~ Inlets, Grease & oil trap – features, location, function , Storm regulator, inverted siphon – features, location, function
13 th	06.12.22	01	~ Disposal on land – sewage farming, sewage application and dosing, sewage sickness-causes and remedies
	07.12.22	02	~ Disposal by dilution – standards for disposal in different types of water bodies, self purification of stream, Revision of Chapter-9.
	09.12.22	01	<u>Chapter-10</u> <u>Sewage treatment :</u> ~ Principles of treatment, flow diagram of conventional treatment .
	10.12.22	01	~ Primary treatment – necessity, principles, essential features, functions
14 th	13.12.22	01	~ Secondary treatment – necessity, principles, essential features, functions, Revision of Chapter-10.
	14.12.22	02	<u>Chapter-11</u> <u>Sanitary plumbing for building :</u> ~ Requirements of building drainage, layout of lavatory blocks in residential buildings, layout of building drainage
	16.12.22	01	~ Plumbing arrangement of single storied & multi storied building as per I.S. code practice
	17.12.22	01	~ Sanitary fixtures – features, function, and maintenance and fixing of the fixtures – water closets, flushing cisterns, urinals, inspection chambers, traps, anti-syphonage pipe
15 th	20.12.22	01	Revision of Chapter-11
	21.12.22	02	Revision
Total No. of Classes		66	

Sudha
14/12/22
Faculty
Signature

[Signature]
14/12/2022
HOD
Department of Civil Engg

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Principal
OSME, Keonjhar

14/12/22