

LESSON PLAN					
Discipline: Civil.Engineering			Name of teaching faculty:PAPU BHUYAN		
Subject:Water supply and Waste water engineering (Th.4)			Semester from Date:01/10/2021 to 08/01/2022		
Semester: 5th			No. of weeks: 14		5P/week
No. of Days/ week class allotted: 05 period per week(Tue,wed,thurs,fri and Saturday 1 period each)					Total period: 75
MONTH	WEEK	DATE	DAY	SYLLABUS TO BE COVERED	NO. OF PERIOD AVAILABLE
O C T O B E R				CHAPTER-1 Introduction to Water Supply, Quantity and Quality of water(10)	
	FIRST	10/1/2021	Friday	1.1 Necessity of treated water supply	1
	SECOND	10/5/2021	Tuesday	1.2 Per capita demand	1
		10/7/2021	thursday	variation in demand and factors affecting demand	1
		10/8/2021	Friday	1.3 Methods of forecasting population	1
	THIRD	16/10/2021	saturday	Numerical problems using different methods	1
	FOURTH	21/10/2021	Thursday	1.4 Impurities in water – organic and inorganic	1
		22/10/2021	Friday	Harmful effects of impurities	1
	F I F T H W E E K	26/10/2021	Tuesday	1.5 Analysis of water –physical	1
		27/10/2021	Wednesd	1.5 Analysis of water - chemical and bacteriological	1
		28/10/2021	Thursday	1.6 Water quality standards for different uses	1
				CHAPTER-2(Sources and Conveyance of water)(8P)	
		29/10/2021	Friday	2.1 Surface sources – Lake, stream, river and impounded reservoir	1
		30/10/2021	Saturday	2.2 Underground sources – aquifer type & occurrence – Infiltration gallery, infiltration well, springs, well	1
F I R S T		11/2/2021	Tuesday	2.3 Yield from well- method s of determination, Numerical problems using yield formulae (deduction excluded)	1
		11/3/2021	Wednesd	2.4 Intakes – types, description of river intake, reservoir intake, canal intake	1

N O V E M B E R	W E E K	11/5/2021	Friday	2.5 Pumps for conveyance & distribution – types, selection, installation.	1	
		11/6/2021	Saturday	2.6 Pipe materials – necessity, suitability, merits & demerits of each type	1	
	S E C O N D W E E K	11/9/2021	Tuesday	2.7 Pipe joints – necessity, types of joints	1	
		11/10/2021	Wednesd	2.7 Pipe joints – suitability, methods of jointing Laying of pipes – method	1	
				CHAPTER-3(Treatment of water)(12P)		
		11/11/2021	Thursday	3.1 Flow diagram of conventional water treatment system	1	
		11/12/2021	Friday	3.2 Treatment process / units :3.2.1 Aeration ; Necessity	1	
	T H I R D W E E K	16/11/2021	Tuesday	3.2.2 Plain Sedimentation : Necessity, working principles,	1	
		17/11/2021	Wednesd	Sedimentation tanks – types, essential features, operation & maintenance	1	
		18/11/2021	Thursday	3.2.3 Sedimentation with coagulation: Necessity, principles of coagulation, types of coagulants	1	
		20/11/2021	Saturday	3.2.3 Flash Mixer, Flocculator, Clarifier (Definition and concept only)	1	
	F O U R T H W E E K	23/11/2021	tuesday	3.2.4 Filtration : Necessity, principles, types of filters Slow Sand Filter	1	
		24/11/2021	Wednesd	Rapid Sand Filter and Pressure Filter – essential features	1	
		25/11/2021	thursday	3.2.5 Disinfection : Necessity, methods of disinfection, Chlorination – free and combined chlorine demand, available chlorine	1	
		26/11/2021	Friday	residual chlorine, pre-chlorination, break point chlorination, super- chlorination	1	
	FIFTH WEEK		30/11/2021	Tuesday	3.2.6 Softening of water – Necessity, Methods of softening	1
	F I R S T W	12/1/2021	Wednesd	Lime soda process and Ion exchange method (Concept Only)	1	
				CHAPTER-4(Distribution system and Appurtenance in distribution system)(08P)		
		12/2/2021	Thursday	4.1 General requirements, types of distribution system-gravity	1	

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1 S E C O N D W E E K	12/3/2021	Friday	types of distribution system-gravity, direct and combined	1	
	12/4/2021	Saturday	4.2 Methods of supply – intermittent and continuous	1	
2 T H I R D W E E K	12/7/2021	Tuesday	4.2 Methods of supply – intermittent and continuous	1	
	12/8/2021	Wednesd	4.3 Distribution system layout – types, comparison, suitability	1	
	12/9/2021	Thursday	4.3 Distribution system layout – types, comparison, suitability	1	
	12/10/2021	Friday	4.4 Valves-types, features, uses, purpose-slucice valves, check valves	1	
3 F O U R T H W E E K	14/12/2021	Tuesday	air valves, scour valves, Fire hydrants, Water meters	1	
			CHAPTER-5(W/s plumbing in building)(02P)		
	15/12/2021	Wednesd	5.1 Method of connection from water mains to building supply	1	
	16/12/2021	Thursday	5.2 General layout of plumbing arrangement for water supply in single storied and multi-storied building as per I.S. code.	1	
	SECTION B				
			CHAPTER-6(Introduction)(05P)		
	17/12/2021	Friday	6.1 Aims and objectives of sanitary engineering	1	
	18/12/2021	Saturday	6.2 Definition of terms related to sanitary engineering	1	
4 F I F T H W E E K	21/12/2021	tuesday	6.3 Systems of collection of wastes– Conservancy and Water Carriage System – features, comparison, suitability	1	
	22/12/2021	Wednesd	6.3 Systems of collection of wastes– Conservancy and Water Carriage System – features, comparison, suitability	1	
	23/12/2021	Thursday	6.3 Systems of collection of wastes– Conservancy and Water Carriage System – features, comparison, suitability	1	
			CHAPTER-7(Quantity and Quality of sewage)(07P)		
	24/12/2021	Friday	7.1 Quantity of sanitary sewage – domestic & industrial sewage, variation in sewage flow	1	
5 S E C O N D W E E K	28/12/2021	Tuesday	numerical problem on computation quantity of sanitary sewage.	1	

	FIFTH WEEK	29/12/2021	Wednesday	7.2 Computation of size of sewer, application of Chazy's formula, Limiting velocities of flow : self-cleaning and scouring	1
30/12/2021		Thursday	7.3 General importance, strength of sewage, Characteristics of sewage-physical, chemical & biological	1	
31/12/2021		Friday	7.4 Concept of sewage-sampling, tests for – solids, pH, dissolved oxygen, BOD, COD	1	
JANUARY	FIRST WEEK	1/1/2022	Saturday	7.4 Concept of sewage-sampling, tests for – solids, pH, dissolved oxygen, BOD, COD	1
		1/4/2022	Tuesday	7.4 Concept of sewage-sampling, tests for – solids, pH, dissolved oxygen, BOD, COD	1
			CHAPTER-8(Sewerage system)(05P)		
	1/5/2022	Wednesday	8.1 Types of system-separate, combined, partially separate , features, comparison between the types, suitability	1	
	1/6/2022	Thursday	8.2 Shapes of sewer – rectangular, circular, avoid-features, suitability	1	
		1/7/2022	Friday	8.3 Laying of sewer-setting out sewer alignment	1
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				CHAPTER-9(Sewer appurtenances and Sewage Disposal)(07P)	
				9.1 Manholes and Lamp holes – types, features, location, function	1
				9.2 Inlets, Grease & oil trap – features, location, function	1
				9.3 Storm regulator, inverted siphon – features, location, function	1
				9.4 Disposal on land – sewage farming, sewage application and dosing, sewage sickness-causes and remedies	1
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		9.5 Disposal by dilution – standards for disposal in different types of water bodies, self purification of stream	1
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		CHAPTER-10(Sewage treatment)(08P)	
		10.1 Principles of treatment	1
		flow diagram of conventional treatment	1
		10.2 Primary treatment – necessity, principles, essential features, functions	1
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		10.3 Secondary treatment – necessity, principles, essential features, functions	1
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		CHAPTER-11(Sanitary plumbing for building)(03P)	
		11.1 Requirements of building drainage, layout of lavatory blocks in residential buildings, layout of building drainage	1
		11.2 Plumbing arrangement of single storied & multi storied building as per I.S. code practice	1
		11.3 Sanitary fixtures – features, function, and maintenance and fixing of the fixtures – water closets, flushing cisterns, urinals, inspection chambers, traps, anti- syphonage pipe	1

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