Specimen of Lesson Plan				
* Name of the Faculty :		Sarita sharma	(theory) and (Practical)	
Discipline :			Civil Engineering	
Semester :			4th	
Subject:			WATER SUPPLY AND WASTE WATER ENGINEERING	
Lesson Plan Duration :			15 weeks (from March, 2023 to june,2023)	
** Work Load (Lecture/Practical) per week (in hours): Lectures-05, Practicals-02				
Week	**Theory**		**Practical**	
	Lecture day	**Topic (including assignment/test)**	**Practical Day**	**Topic**
1st	1	Necessity and brief description of water supply system.	1	To determine turbidity of water sample
	2	Necessity and brief description of water supply system.		
	Quantity			
	3	Quantity of Water: Water requirement,Rate of demand and variation in rate of demand		
	4	Per capita consumption for domestic, industrial, public and fire fighting uses as per BIS standards		
2nd	5	Population Forecasting		
	Quantity of Water			
	6	Quality of Water: Meaning of pure water and methods of analysis of water	2	To determine dissolved oxygen of given sample
	7	Physical, Chemical and bacteriological tests and their significance		
	8	Standard of potable water as per Indian Standard		
3rd	9	Maintenance of purity of water (small scale and large scale quantity		
	Water treatment			
	10	Water Treatment (brief introduction) Sedimentation - purpose, types of sedimentation tanks	3	To determine pH value of water
	11	Coagulation floculation - usual coagulation and their feeding		
	12	Filtration - significance, types of filters, their suitability		
4th	13	Necessity of disinfection of water, forms of chlorination, break point chlorine, residual chlorine, application of chlorine.		
	14	Flow diagram of different treatment units, functions of (i) Areation fountain (ii) mixer (iii) floculator, (iv) classifier, (v) slow and rapid sand filters (vi) chlorination chamber.	4	To perform jar test for coagulation
	15	Conveyance of Water: Different types of pipes - cast iron, PVC, steel, asbestos cement, concrete and lead pipes. Their suitability and uses, types of joints in different types of pipes.		
	16	Appurtenances: Sluice, air, reflux valves, relief valves, scour valves, bib cocks, stop cocks, fire hydrants, water meters their working and uses		
5th	17	Appurtenances: Sluice, air, reflux valves, relief valves, scour valves, bib cocks, stop cocks, fire hydrants, water meters their working and uses, Assignment	5	To determine BOD of given sample
	18	Sessional week		
	19			
	20			

6th	Laying of Pipes			
	21	Laying out Pipes : Setting out alignment of pipes		
	22	Excavation for laying of pipes and precautions to be taken in laying pipes in black cotton soil.	6	To determine residual chlorine in water
	23	Handling, lowering beginning and jointing of pipes		
	24	Testing of pipe lines,Back filling & Use of boring rods		
7th	Building Water Supply			
	25	Building Water Supply: Connections to water main (practical aspect only)		
	26	Water supply fixtures and installations and terminology related to plumbing	7	To determine conductivity of water and total dissolved solids
	Waste Water Engineering			
	27	WASTE WATER ENGINEERING: Purpose of sanitation,Necessity of systematic collection and disposal of waste Definition of terms in sanitary engineering		
	28	Collection and conveyance of sewage Conservancy and water carriage systems, their advantages and Disadvantages		
8th	29	(a) Surface drains (only sketches) : various types, suitability (a) Surface drains (only sketches) : various types, suitability (b) Types of sewage: Domestic, industrial, storm water and its seasonal variation		
	30	Sewerage System-Introduction	8	To study the installation of following:a) Water meter b) Connection of water supply of building with main c) Pipe valves and bends d) Water supply and sanitary fittings
	31	Types of sewerage systems, materials for sewers, their sizes and joints		
	32	Appurtenance: Location, function and construction features. Manholes, drop manholes, tank hole, catch basin, inverted siphon, flushing tanks		
9th	33	Laying and Construction of Sewers:		
	34	Setting out/alignment of sewers	9	To study and demonstrate the joining/threading of GI Pipes, CI Pipes, SW pipes,D.I. pipes and PVC pipes.
	35	Excavations, checking the gradient with boning rods preparation of bedding, handling and jointing testing and back filling of sewers/pipes.		
	36	Excavations, checking the gradient with boning rods preparation of bedding, handling and jointing testing and back filling of sewers/pipes.		
10th	37	Construction of surface mains and different sections required,Assignements given based on samples question papers		
	38	Sessional Week		
	39			
	40			
11th	Sewage			
	41	Properties of sewage and IS standards for analysis of sewage		
	42	Physical, chemical and bacteriological parameters	10	To demonstrate the laying of SW pipes for sewers
	Natural Methods of Sewerage Disposal:			
	43	General composition of sewage and disposal methods		
	44	Disposal by dilution,Self purification of stream		
12th	45	Disposal by land treatment		
	46	Nuisance due to disposal		
	Sewage Treatment			
	47	Sewage Treatment- Introduction		
	48	Meaning and principle of primary and secondary treatment and activated sludge process their flow diagrams		

13th	49	Introduction and uses of screens, grit chambers, detritus tanks		
	50	skimming tanks, plainsedimentation tanks, primary clarifers, secondary clarifers,		
	51	filters, control beds, intermittent sand filters, trickling filters,		
	52	sludge treatment and disposal, oxidation ponds		
14th	53	Building Drainage,Aims of building drainage and its requirements		
	54	Different sanitary fittings and installations,Traps, seals, causes of breaking seals, Assignment given		
	55	Sessional week		
	56			
15th	57			
	58	Revision of Whole syllabus		
	59	Revision of Whole syllabus		
	60	Revision of Whole syllabus		