Lesson Plan

Name of Faculty: - Mr. Vijay Pal(Theory& Practical)

Discipline: Civil Engineering

Semester: 4th

Subject: Public Health Engg.

Lesson Plan Duration: 15 weeks (from Jan-2019 to Apr-2019)

Work Load: Lectures-4 Practicals-2

WEEK	THEORY		PRACTICAL	
	LECTURE DAY	TOPIC	PRACTICAL DAY	TOPIC
1	1	Necessity and brief description of water supply system, Sources of water – surface/sub-surface sources	1st	To determine turbidity of water sample
	2	Quantity of Water		
	3	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 (no numerical problems		
2	1	Population Forecasting	2nd	To determine dissolved oxygen of given sample
	2	Revision of covered syllabus		
	3	Meaning of pure water and methods of analysis of water, Physical, Chemical and bacteriological tests and their significance		
	4	Standard of potable water as per Indian Standard, Maintenance of purity of water		
3	1	Water Treatment:- Sedimentation - purpose, types of sedimentation tanks	3rd	To determine pH value of water
	2	Coagulation/floculation - usual coagulation and their feeding, Filtration - significance, types of filters, their suitability		
	3	Necessity of disinfection of water, forms of chlorination, break point chlorine, residual chlorine, application of chlorine		
	4	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	1	Revision of covered syllabus	4th	To perform jar test for coagulation
	2	Class test and assignment		
	3	Conveyance of Water:-Different types of pipes - cast iron, PVC, steel, asbestos cement, concrete and lead pipes.		
	4	suitability and uses,		
5	1	Sessional test 1st	-	
	2			
	3			
	4	Problem discussion for Sessional test		
6	1	types of joints in different types of pipes.	5th	To determine BOD of given sample
	2	Appurtenances: Sluice, air, reflux valves, relief		

		valves, scour valves		
	3	bib cocks, stop cocks, fire hydrants, water meters their working and uses		
	4	Laying of Pipes:-Setting out alignment of pipes, Excavation for laying of pipes and precautions to be taken		
7	1	Handling, lowering and jointing of pipes,Testing of pipe lines,Back filling	6th	To determine residual chlorine in water
	2	Building Water Supply :-Connections to water main (practical aspect only)		
	3	Water supply fittings (with sketches) and terminology related to plumbing		
	4	Waste water engg..Introduction:-Purpose of sanitation,Necessity of systematic collection and disposal of waste		
8	1	Definition of terms in sanitary engineering, Collection and conveyance of sewage, Conservancy and water carriage systems, their advantages and Disadvantages	7th	To determine conductivity of water and total dissolved solids
	2	Surface drains (only sketches) : various types, suitability,Types of sewage: Domestic, industrial, storm water and its seasonal variation		
	3	Class test and assignment		
	4	Sewerage System:-Types of sewerage systems, materials for sewers, their sizes and joints		
9	1	Appurtenance: Location, function and construction features. Manholes, drop manholes, tank hole	8th	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
	2	catch basin, inverted siphon, flushing tanks grease and oil traps, storm regulators, ventilating shafts		
	3	Revision of covered syllabus		
	4	Doubt clear from students		
10	1	Sessional test 2nd	-	
	2			
	3			
	4	Problem discussion for Sessional test		
11	1	Laying and Construction of Sewers:-Setting out/alignment of sewers	9th	To study and demonstrate the joining/tPeriodseading of GI Pipes, CI Pipes, SWG pipes, PVC pipes and copper pipes.
	2	Excavations, checking the gradient with boning rods preparation of bedding, handling and jointing testing and back filling of sewers/pipes		
	3	Construction of surface drains and different sections required		
	4	Sewage Characteristics:-Properties of sewage and IS standards for analysis of sewage		
12	1	Physical, chemical and bacteriological parameters	10th	To demonstrate the laying of SWG pipes for sewers
	2	Natural Methods of Sewerage Disposal:- General		

		composition of sewage and disposal methods,Disposal by dilution		
	3	Self purification of stream,Disposal by land treatment,Nuisance due to disposal		
	4	Sewage Treatment:- Meaning and principle of primary		
13	1	secondary treatment and activated sludge process their flow diagrams	11^{th}	Study of water purifying process by visiting a field lab.
	2	Introduction and uses of screens, grit chambers, detritus tanks, skimming tanks, plain sedimentation tank.		
	3	primary clarifers, secondary clarifers, filters, control beds, intermittent sand filters		
	4	trickling filters, sludge treatment and disposal, oxidation ponds (Visit to a sewage treatment plant)		
14	1	Building Drainage:- Aims of building drainage and its requirements	12^{th}	Demonstration of plumbing tools.
	2	Different sanitary fittings and installations,Traps		
	3	Revision of covered syllabus		
	4	Any doubt from students and copy check		
15	1	Sessional 3^{rd}	-	-
	2			
	3			
	4	Problem discussion for Sessional test		