

Lesson Plan

Name of the Faculty :
Discipline : **Civil Engg.**
Semester : **4th Sem.**
Subject : **Concrete Tech.**
Lesson Plan Duration : **15 weeks**

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1.	1.	Introduction	1.	Physical properties of cement
	2.	Uses of concrete		
	3.	Ingredients of concrete-cement		
2.	1.	Types of cement	2.	Flakiness and elongation index of aggregates
	2.	Classification of Aggregates		
	3.	Characteristics of Aggregate		
3.	1.	Water –quality requirements	3.	Silt in aggregate
	2.	Water cement Ratio		
	3.	Water cement Ratio Law		
4.	1.	Workability, factors affecting workability	4.	Specific gravity and water absorption of aggregates
	2.	Slump Test		
	3.	Compaction factor test, VB test		
5.	1.	Recommended slump	5.	Bulk density and void of aggregates
	2.	Revision		
	3.	Properties of concrete in plastic state		
6.	1.	Workability	6.	Surface moisture in fine aggregates by displacement method
	2.	Segregation		
	3.	Bleeding and Harshness		
7.	1.	Strength and Durability	7.	Particle size distribution of fine, coarse and all in aggregates by sieve analysis
	2.	Impermeability		
	3.	Objectives of mix design, different grades of concrete		
8.	1.	Adjustment on site for diff. factors	8.	Viva-voce
	2.	Diff. between nominal & controlled mix		
	3.	Controlled mix design		
9.	1.	Admixtures for conc.	9.	Adjustment for bulking of fine aggregates
	2.	Admixtures for conc.(continued)		
	3.	Concreting under special conditions		
10.	1.	Under water concreting	10.	Slump test
	2.	Cold and hot water concreting		
	3.	Ready mix conc., Fiber reinforced conc.		
11.	1.	Polymer conc., Fly ash conc.	11.	Effect of water, aggregate/cement ratio on slump
	2.	Storing of cement in a warehouse , at site, Effect of storage on strength		
	3.	Storing of aggregate, Batching		
12.	1.	Mixing- hand mixing, machine mixing	12.	Compaction factor test
	2.	Transportation of concrete		

	3.	Placement of concrete		
13.	1.	Compaction of concrete	13.	NDC test on concrete
	2.	Curing of concrete		
	3.	Joints in concrete		
14.	1.	Defects in concrete	14.	Compressive strength of concrete cubes
	2.	Non- destructive tests on concrete		
	3.	Revision		
15.	1.	Revision	15.	Viva –voce and Quiz
	2.	Revision		
	3.	Class Test		

Lesson Plan

Name of the Faculty :
Discipline : Civil Engg.
Semester : 4th Sem.
Subject : Water Supply and Waste Water Engg.
Lesson Plan Duration : 15 weeks

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1.	1.	Necessity of water supply system	1.	Turbidity of water sample
	2.	Quality of water		
	3.	Demand and variation in demand		
	4.	Per capita consumption		
	5.	Population forecasting		
2.	1.	Revision	2.	Dissolved oxygen of water sample
	2.	Quality of water		
	3.	Analysis of water		
	4.	Physical test on water		
	5.	Chemical and bacteriological test on water		
3.	1.	Maintenance of purity of water	3.	pH value of water sample
	2.	Water treatment		
	3.	Sedimentation		
	4.	Coagulation		
	5.	Filtration		
4.	1.	Disinfection of water	4.	Jar test for coagulation
	2.	Functions of aeration fountain, mixer,		
	3.	Flocculator, filters, chlorination chamber		
	4.	Revision		
	5.	Types of pipes		
5.	1.	Types of joints in different pipes	5.	BOD of given sample
	2.	Sluices, air valves, reflux valves, relief valves,		
	3.	Scour valve, bib cock, stop cock,		
	4.	Fire hydrant, water meter		
	5.	Distribution of water		
6.	1.	System of water supply	6.	Residual chlorine in water
	2.	Maintenance of water system		
	3.	Revision		
	4.	Class Test		
	5.	Laying out pipes, alignment of pipes		
7.	1.	Precautions in laying of pipes	7.	Conductivity of water and total dissolved solids
	2.	Lowering and jointing of pipes		
	3.	Testing of pipe lines		
	4.	Building water supply		
	5.	Water supply fixtures and installations		

8.	1.	Purpose of Sanitation, disposal of waste	8.	Viva-voce
	2.	Terminology in waste water engg.		
	3.	Collection and conveyance of sewage		
	4.	Surface drains, Types of sewage		
	5.	Sewerage system, types		
9.	1.	Manholes, drop manhole	9.	Study of installation of various fittings in water supply
	2.	Tank hole, catch basin, inverted siphon		
	3.	Flushing tanks, grease traps		
	4.	Storm regulators, ventilating shafts		
	5.	Laying and construction of sewers		
10.	1.	Setting and alignment of sewers	10.	Jointing of various pipes
	2.	Excavation, bedding, jointing, back filling		
	3.	Construction of surface mains		
	4.	Properties of sewage		
	5.	Analysis of sewage		
11.	1.	Physical, chemical and bacteriological	11.	Laying of SW pipes for sewers
	2.	Revision		
	3.	Natural methods of sewerage disposal		
	4.	General composition of sewage		
	5.	Disposal by dilution		
12.	1.	Self- purification of streams	12.	Visit to a field lab
	2.	Disposal by land treatment		
	3.	Class test		
	4.	Sewage treatment, principle		
	5.	Activated sludge process		
13.	1.	Screens, grit chambers,	13.	To test house drainage
	2.	Skimming tanks, plain sedimentation tank		
	3.	Clarifiers, control beds,		
	4.	Filters		
	5.	Oxidation ponds		
14.	1.	Building drainage	14.	Visit to site
	2.	Aims and requirements of building drainage		
	3.	Sanitary fittings		
	4.	Traps, seals, causes		
	5.	Breaking of water seals		
15.	1.	Revision	15.	Viva-voce
	2.	Revision		
	3.	Revision		
	4.	Class test		
	5.	Discussion of class test		

Lesson Plan

Name of the Faculty :
Discipline : **Civil Engg.**
Semester : **4th Sem.**
Subject : **Irrigation Engg.**
Lesson Plan Duration : **15 weeks**

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1.	1.	Definition and necessity of irrigation		
	2.	History of development of irrigation		
	3.	Principal crops & water requirements		
	4.	Crop season, soil water,		
2.	1.	Duty, delta and base period		
	2.	GCA,CCA, intensity of irrigation		
	3.	Hydrological cycle		
	4.	Rain gauges		
3.	1.	Average rainfall methods		
	2.	Runoff, factor affecting runoff		
	3.	Hydrograph, unit hydrograph		
	4.	Methods of irrigation		
4.	1.	Flow irrigation		
	2.	Lift irrigation		
	3.	Sprinkler irrigation		
	4.	Drip irrigation		
5.	1.	Comparison of diff. methods		
	2.	Canals, Classification		
	3.	Appurtenances of a canal system		
	4.	Class Test		
6.	1.	Sketches of diff. canal sections		
	2.	Canal lining- advantages & disadvantages		
	3.	Breaches in canals and control		
	4.	Maintenance of canals		
7.	1.	Tube well irrigation		
	2.	Comparison with canal irrigation		
	3.	Tube well- diff. terms		
	4.	Yield of a well		
8.	1.	Types of tube wells, method of boring,		
	2.	Development of a well		
	3.	Water harvesting techniques		
	4.	Recharge pits and recharge wells		
9.	1.	Classification of dams		
	2.	Earthen dams, causes of failure		
	3.	Gravity dams, terms associated,		
	4.	Method of construction		

10.	1.	Small and micro dams		
	2.	Spillway and energy dissipation		
	3.	Canal Headworks,		
	4.	Class Test		
11.	1.	Discussion on class test		
	2.	General layout		
	3.	Diff. parts of headworks		
	4.	Functions of Diff. parts		
12.	1.	Weir and barrage		
	2.	Cross drainage works		
	3.	Functions and necessity		
	4.	Diff. types of C/D works		
13.	1.	Sketches of C/D works		
	2.	Falls		
	3.	Cross and head regulator		
	4.	Outlets, escapes		
14.	1.	River training works		
	2.	Guide banks, Levees,		
	3.	Groynes and spurs		
	4.	Pitched island, cutoff		
15.	1.	Waterlogging, causes and effects		
	2.	Detection and prevention		
	3.	Drains , ground water recharge		
	4.	Class Test		

Lesson Plan

Name of the Faculty :
Discipline : Civil Engg.
Semester : 4th Sem.
Subject : Surveying
Lesson Plan Duration : 15 weeks

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1.	1.	Contouring	1.	Contour plan by radial line method
	2.	Concept, purpose, contour interval,	2.	-do-
2.	1.	Characteristics of contouring, methods of contouring	1.	Contour plan by method of squares
	2.	Interpolation of contours, uses of contour maps,	2.	-do-
3.	1.	Computation of earthwork	1.	Preparation of a contour plan of road
	2.	Theodolite surveying	2.	-do-
4.	1.	Diff. parts of a theodolite	1.	Basic about a theodolite
	2.	Operations of a theodolite	2.	Temp. adjustment of a theodolite
5.	1.	Horizontal and vertical angle	1.	Reading of a vernier and working out the least count
	2.	Prolonging a line, Bearing of a line	2.	Measurement of vertical angles
6.	1.	Traversing, Plotting a traverse	1.	Measurement of magnetic bearing of a line
	2.	Concept of coordinates	2.	Plotting a closed traverse with a theodolite
7.	1.	Errors in theodolite survey	1.	-do-
	2.	Heights of objects	2.	To find the height of objects with theodolite
8.	1.	Tachometric surveying	1.	Revision practice of theodolite
	2.	Methods of Tachometry	2.	-do-
9.	1.	General principals of stadia tachometry	1.	Viva-voce
	2.	Numericals	2.	
10.	1.	Simple circular curve, need & definition	1.	Setting out simple circular curve with offsets from the chords produced
	2.	Elements of simple circular curve	2.	-do-
11.	1.	Setting out of simple circular curve by linear measurements	1.	Setting out simple circular curve with one theodolite
	2.	By tangential angles, numericals	2.	-do-
12.	1.	Transition Curve, need, length of a transition curve	1.	Use of minor instruments
	2.	Setting out transition curve	2.	Use of minor instruments
13.	1.	Vertical curve	1.	Use of minor instruments
	2.	EDM, Planimeter	2.	Demonstration of digital instruments

14.	1.	Total station, GIS,GPS	1.	Demonstration of Total Station
	2.	Minor instruments	2.	Field Visit
15.	1.	Use of planimeter	1.	Viva-voce and practice
	2.	Class Test	2.	Viva-voce and practice

Lesson Plan

Name of the Faculty :
Discipline : Civil Engg.
Semester : 4th Sem.
Subject : RCC
Lesson Plan Duration : 15 weeks

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1.	1.	Concept of R.C.C.		
	2.	Reinforcing materials, Loading		
	3.	Working stress method		
	4.	Limit state method		
	5.	Shear and development length		
2.	1.	Max. shear stress		
	2.	Numericals		
	3.	Basics of singly reinforced beam		
	4.	Neutral axis, balanced beam,		
	5.	Under reinforced and over reinforced		
3.	1.	MOR, Numericals		
	2.	Numericals		
	3.	Design of singly reinforced beam		
	4.	Numericals		
	5.	Numericals		
4.	1.	Concept of limit state method		
	2.	Partial factors and design loads		
	3.	Design of singly reinforced beam by LSM		
	4.	Numericals		
	5.	Numericals		
5.	1.	Numericals		
	2.	Numericals		
	3.	Numericals		
	4.	Numericals		
	5.	Class Test		
6.	1.	Doubly reinforced beam by LSM		
	2.	Numericals		
	3.	Numericals		
	4.	Numericals		
	5.	Numericals		
7.	1.	T- beam		
	2.	L- beam		
	3.	Numericals		
	4.	Numericals		
	5.	Revision		
8.	1.	One way slab by LSM		

	2.	Numericals		
	3.	Numericals		
	4.	Numericals		
	5.	Numericals		
9.	1.	Two way slab by LSM		
	2.	Numericals		
	3.	Numericals		
	4.	Numericals		
	5.	Numericals		
10.	1.	Revision		
	2.	Revision		
	3.	Revision		
	4.	Class Test		
	5.	Discussion of Class Test		
11.	1.	Axially Loaded Column		
	2.	Classification of Columns		
	3.	Effective length of column		
	4.	Reinforcement in columns		
	5.	Design of axially loaded square column		
12.	1.	Numericals		
	2.	Design of circular column		
	3.	Numericals		
	4.	Numericals		
	5.	Numericals		
13.	1.	Concept of prestressing , diff. methods		
	2.	Advantages and disadvantage of prestressing		
	3.	Losses in prestress		
	4.	Revision of chapter 1,2,3		
	5.	Revision of chapter 4		
14.	1.	Revision of chapter 4		
	2.	Revision of chapter 5		
	3.	Revision of chapter 6		
	4.	Revision of chapter 7,8		
	5.	Revision of chapter 9		
15.	1.	Revision of chapter 10		
	2.	Revision of chapter 11		
	3.	Revision of chapter 11		
	4.	Class test		
	5.	Discussion on class test		

Lesson Plan

Name of the Faculty :
Discipline : Civil Engg.
Semester : 4th Sem.
Subject : Civil Engg. Drawing
Lesson Plan Duration : 15 weeks

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1.			1.	X-section of open drains
			2.	X-section of earthenware and RCC sewers
2.			3.	X-section of masonry sewers
			4.	X-section of floor trap , gully trap
3.			5.	X-section & plan of inspection chamber
			6.	X-section & plan of a manhole
4.			7.	Detailed plan & X-section of a domestic septic tank
			8.	Detailed plan & X-section of a soak pit
5.			9.	X-section through the external wall of lavatories
			10.	-do-
6.			11.	Plan of a bathroom showing various fittings
			12.	Sectional elevation of a two storeyed building showing details of one pipe system and two pipe system
7.			13.	
			14.	Class test & Viva-voce
8.			15.	Layout plan of sewage treatment plant for a residential area
			16.	Reading of working drawings
9.			17.	Reading of working drawings
			18.	L-section of a channel
10.			19.	Typical X-sections of various canal sections
			20.	-do-
11.			21.	Plan of a canal headworks
			22.	L-section of a weir
12.			23.	X-section of an earthen dam
			24.	-do-
13.			25.	X-section of a tube-well
			26.	-do-
14.			27.	Layout of rainwater harvesting

			28.	system
15.			29.	Class test
			30.	Viva-voce