

LESSON PLAN

Name of the Faculty MS.NISHA YADAV
Discipline CIVIL ENGG.
Semester 4TH
Subject Concrete Technology

Lesson Plan Duration 15 weeks(from MARCH, 2023 to JUNE,2023)

**** Work Load(Lecture/Practical) per week(in hours):-Lectures : 04 Practical: 2**

Week		Theory	Practical
	Lecture	Topic (inculding assignment/test)	
1st	1st	Introduction to concrete	Determine Physical properties of cement
	2nd	uses of concrete as compare to others	
	3rd	types of cement as per IS Codes,test on cement	
	4th	Classification of aggregates according to size and shape	
2nd	5th	Characteristics of aggregates	Determine Physical properties of cement
	6th	Revision/Assignment	
	7th	Grading of aggregates	
	8th	fineness modulus	
3rd	9th	Water: Water Quality requirements as per IS:456-2000	Determine flakiness and elongation index of coase aggregate
	10th	Hydration of cement principle of water-cement ratio	
	11th	Duff Abram's Water-cement laws	
	12th	Limitations of water-cement ratio law and its effects on strength	
4th	13th	Revision	Determine Silt content in aggregates
	14th	Revision/Assignment	
	15th	Properties in plastic state: Workability	
	16th	Properties in plastic state: Workability	
5th	17th	Revision	Determine water absorption and specific gravity
	18th	Factors affecting workability	
	19th	Measurement of workability	
	20th	Measurement of workability	
6th	21th	Revision	Determine bulk density and voids of aggregates
	22th	per IS:456-2000/SP-23	
	23th	Properties in hardened state: Strength, Durability	
	24th	Impermeability, Dimensional changes;	
7th	25th	Revision/Assignment	Determine Particle
	26th	Objectives of mix design	

	27th	introduction to various grades as per IS:456-2000	size distribution
	28th	2000	
8th	29th	Revision	Determine Particle size distribution
	30th	absorption of aggregate	
	31th	Revision	
	32th	Revision/Assignment	
9th	33th	Difference between nominal and controlled concrete	Determine bulking of fine aggregates
	34th	Introduction to IS-10262-2009-Code for controlled mix design.	
	35th	Cold weather concreting,hot weather concreting	
	36th	Under water concreting	
10th	37th	Ready mix concrete	Determine workability
	38th	Revision	
	39th	Storing of Cement,aggregates and water at site	
	40th	Batching of materials	
11th	41th	Mixing	Determine workability
	42th	Transportation of concrete	
	43th	Placement of concrete	
	44th	Compaction:	
12th	45th	Revision/Assignment	compaction factor test
	46th	Finishing concrete slabs - screeding, floating and trowelling	
	47th	Objective of curing, methods of curing	
	48th	Duration for curing and removal of form work	
13th	49th	Revision	Non destructive test
	50th	Revision/Assignment	
	51th	jointing; their importance and location	
	52th	Defects in concrete: Identification of defects and methods of	
14th	53th	Revision	determine compressive strength of concrete cube
	54th	Importance and methods of non-destructive tests	
	55th	Revision/Assignment	
	56th	Revision	
15th	57th	Pulse Velocity method	Flexural strength of concrete beam
	58th	Revision	
	59th	Revision	
	60th	Revision	

LESSON PLAN

Name of Faculty : MR. AMIT GUPTA

Discipline : Civil Engineering

Semester : 4th

Subject : water supply and irrigation engg drawing

Lesson Plan Duration :15 weeks(from MARCH, 2023 to JUNE,2023)

Work load (Lecture / Practical) per week(in hours): practicals -03

Week	Practical	Topic (DRAWING SHEETS)
1st	1st	Cross section of standard types of open drains (circular, V-shaped and Ushaped) with their foundations
	2nd	Cross section of standard types of open drains (circular, V-shaped and Ushaped) with their foundations
2nd	3rd	Cross section of earthen ware and RCC sewer pipes
	4th	Cross section of earthen ware and RCC sewer pipes
3rd	5th	Cross sections of masonry sewers (circular and egg shaped)
	6th	Cross sections of masonry sewers (circular and egg shaped)
4th	7th	Detailed section of floor trap and gully trap
	8th	Detailed plan and section of an inspection chamber
5th	9th	Detailed plan and section of a manhole
	10th	Detailed plan and section of a manhole
6th	11th	Detailed plan and cross sections of a domestic septic tank with soak pit for 5-10 users
	12th	Detailed plan and cross sections of a domestic septic tank with soak pit for 5-10 users
7th	13th	Cross-section through the external wall of lavatories at ground and first floor showing the one and two pipe system and the connections of the lavatory to
	14th	Cross-section through the external wall of lavatories at ground and first floor showing the one and two pipe system and the connections of the lavatory to
8th	15th	Revision
	16th	Draw sectional elevation of a two storeyed building showing details of one pipe and two pipes systems with sanitation system
9th	17th	Draw sectional elevation of a two storeyed building showing details of one pipe and two pipes systems with sanitation system
	18th	Revision
10th	19th	Typical cross-section of a channel - L-section of a channel for given data - Typical cross section of an unlined and lined channel in cutting, partly cutting and partly
	20th	Typical cross-section of a channel - L-section of a channel for given data - Typical cross section of an unlined and lined channel in cutting, partly cutting and partly
11th	21th	Layout plan of a canal head works
	22th	Layout plan of a canal head works
12th	23th	Draw the X-section of an Earthen Dam i) Homogeneous ii) Zoned type iii) Diaphragm type
	24th	Revision
13th	25th	Draw the X-section of an Earthen Dam i) Homogeneous ii) Zoned type iii) Diaphragm type
	26th	Revision

14th	27th	Cross section of a tube well
	28th	Cross section of a tube well
15th	29th	Layout and cross section of rain water harvesting system
	30th	Revision

LESSON PLAN

Name of the Faculty MR.AMIT KUMAR

Discipline CIVIL ENGG.

Semester 4TH

Subject IRRIGATION ENGG,

Lesson Plan Duration 15 weeks(from MARCH, 2023 to JUNE,2023)

**** Work Load(Lecture/Practical) per week(in hours):-Lectures : 04**

Week		Theory
	Lecture	Topic (inculding assignment/test)
1st	1st	Introduction: Definition of irrigation
	2nd	Necessity of irrigation
	3rd	History of development of irrigation in India
	4th	Major, medium and minor irrigation projects
2nd	5th	Water Requirement of Crops
	6th	Principal crops in India and their water requirements
	7th	Crop seasons – Kharif and Rabi
	8th	Soil water, soil crop and crop water relationships, Duty, Delta and Base
3rd	9th	Gross commanded area (GCA), culturable commanded area (CCA),
	10th	Hydrological Cycle Catchment Area and Run-off
	11th	Rainfall , definition rain-gauges
	12th	Revision
4th	13th	automatic and non-automatic, methods of estimating average rainfall
	14th	catchment area runoff, factors affecting runoff,
	15th	hydrograph, basic concept of unit hydrograph
	16th	Revision
5th	17th	Methods of Irrigation
	18th	Flow irrigation - its advantages and limitations
	19th	Lift Irrigation – Tubewell, submersible and well irrigation advantages and
	20th	Sprinkler irrigation conditions favourable and essential requirements for
6th	21th	Drip irrigation, suitability of drip irrigation, layout, component parts,
	22th	Revision
	23th	Canal and its Classification
	24th	apurtenancs of a canal and their functions, sketches of different canal
7th	25th	Various types of canal lining - their related advantages and disadvantages,
	26th	Breaches and their control

	27th	Maintenance of lined and unlined canals
	28th	Revision
8th	29th	Tube Well Irrigation
	30th	Introduction, occurrence of ground water, location and command,
	31th	Tube wells, explanation of terms: water table, radius of influence,
	32th	Types of tube wells and their choice-cavity, strainer and slotted type;
9th	33th	Method of boring, installation of well assembly, development of well,
	34th	pump selection and installation and maintenance
	35th	Water Harvesting Techniques: Need and requirement of various methods,
	36th	Runoff from roof top and ground surface, construction of recharge pits
10th	37th	Classification of dams;
	38th	earth dams - types, causes of failure; cross-section of zoned earth dam,
	39th	gravity dams – types, cross-sections of a dam, method of construction
	40th	Concept of small and micro dams
11th	41th	Concept of spillways and energy dissipators
	42th	Revision
	43th	Canal Head Works and Regulatory Works
	44th	Definition, object of canal headworks
12th	45th	general layout, functions of different parts of head works. Difference
	46th	Functions and necessity of the following types: aqueduct, super passage,
	47th	Sketches of the above cross drainage works
	48th	Revision
13th	49th	Definitions of following Hydraulic Structures with Sketches
	50th	Definitions of following Hydraulic Structures with Sketches
	51th	Methods of river training, guide banks, retired (levees) embankments
	52th	groynes and spurs, pitched island, cut-off
14th	53th	Water Logging and Drainage and Ground Water Re-charge
	54th	Definition of water logging – its causes and effects, detection, prevention
	55th	Revision
	56th	Surface and sub-surface drains and their layout
15th	57th	Concept and various techniques used for ground water re-charge
	58th	Revision
	59th	Revision
	60th	Revision

LESSON PLAN

Name of faculty Mr. AMIT
Discipline Civil Engineering
Semester 4th
Subject SFE

Work load (Lecture / Practical) per week(in hours): Lectures-04, practicals -02

Week	Theory			Practical Day	
	Lecture Day	Topic			
1st	1st	Introduction Importance of soil studies in Civil Engineering		1st	To determi
	2nd	Geological origin of soils with special reference to soil profiles in India			
	3rd	residual and transported soil, alluvial deposits, lake deposits, local soils			
	4th	dunes and loess, glacial deposits, black cotton soils, conditions in various parts of India			
	5th	Names of organizations dealing with soil engineering work in India			
2nd	1st	Constituents of soil and representation by a phase diagram		2nd	Extraction a) Extractin b) Extractir
	2nd	Definitions of void ratio, porosity, water content, degree of saturation			
	3rd	bulk density/bulk unit weight, dry unit weight, saturated unit weight			
	4th	correlation between them			
	5th	Simple numerical problems with the help of phase diagrams			
3rd	1st	do		3rd	Field Dens Core Cutte
	2nd	Particle size, shape and their effect on engineering properties of soils			
	3rd	Gradation and its influence on engineering properties			
	4th	Relative density and its use in describing cohesionless soils			
	5th	Behaviour of cohesive soils with change in water content, Atterberg limits			
4th	1st	Field identification tests for soils		4th	Liquid Limi
	2nd	Soil classification system as per BIS 1498; basis, symbols, major divisions			
	3rd	plasticity chart; procedure for classification of a given soil			
	4th	Concept of permeability and its importance			
5th	1st	Darcy's law, coefficient of permeability, seepage velocity and factors affecting it		5th	Mechanica a) Preparat c) Computa e) Interpre
	2nd	Comparison of permeability of different soils as per BIS			
	3rd	Measurement of permeability in the laboratory			
	4th	Effective Stress: Stresses in subsoil			
	5th	Definition and meaning of total stress effective stress and neutral stress			
6th	1st	Importance of effective stress in engineering problems		6th	Demonstra
	2nd	Consolidation and settlement, Creep, Plastic flow			
	3rd	Heaving, Lateral movement, Freeze and thaw of soil			
	4th	Definition and practical significance of compression index, coefficient of volume change			
7th	1st	total settlement, uniform settlement and differential settlement;		7th	Demonstra
	2nd	Settlement due to construction operations and lowering of water table			
	3rd	Concept and Significance of shear strength			
	4th	Factors contributing to shear strength of cohesive and cohesion less soils			
8th	1st	Coulomb's law Examples of shear failure in soils		8th	Demonstra a) Direct St b) Permeak
	2nd	Definition and necessity of compaction			
	3rd	Laboratory compaction test (standard and modified proctor test as per BIS)			
	4th	importance of optimum water content, maximum dry density; moist			
	5th	Compaction control; Density control, measurement of field density			
9th	1st	sand replacement method, moisture control, Proctor's needle and i		9th	Extraction

	2nd 3rd 4th	Purpose and necessity of soil exploration Reconnaissance, methods of soil exploration, Trial pits, borings auger, wash, rotary, percussion to be briefly dealt		a) Extractin b) Extractir
10th	1st 2nd 3rd 4th 5th	Sampling; undisturbed, disturbed and representative samples selection of type of sample; thin wall and piston samples; area ratio number and quantity of samples, resetting, sealing and preservation Presentation of soil investigation results Concept of bearing significance of ultimate bearing capacity, net safe bearing capacity	10th	To determi
11th	1st 2nd 3rd 4th 5th	Guidelines of BIS (IS 6403) for estimation of bearing capacity of soil Factors affecting bearing capacity Concept of vertical stress distribution in soils due to foundation loa Applications of SPT, unconfined compression test and direct shear t Plate load test (no procedure details) and its limitations	11th	Field Dens Core Cutte
12th	1st 2nd 3rd 4th 5th	Improvement of bearing capacity by sand drain method, Concept of shallow and deep foundation; types of shallow foundations: isolated, combined, strip, mat, and th Factors affecting the depth of shallow foundations, deep foundations, type of piles and their suitability	12th	Liquid Limi
13th	1st 2nd 3rd 4th	pile classification on the basis of material, pile group and pile cap. Revision/Discussion Revision/Discussion Revision/Discussion	13th	Demonstra
14th	1st 2nd 3rd 4th 5th	Revision/Discussion Revision/Discussion Revision/Discussion Revision/Discussion Revision/Discussion	14th	Mechanica c) Computa c) Computa e) Interpre
15th	1st 2nd 3rd 4th	Revision/Discussion Revision/Discussion Revision/Discussion Revision/Discussion	15th	Demonstra

Practical Topic
<p>Determine the moisture content of a given sample of soil</p>
<p>Preparation of Disturbed and Undisturbed Samples Preparing a tube sample Preparing a disturbed samples for mechanical analysis.</p>
<p>Moisture Measurement Standard Method</p>
<p>Shrinkage and Plastic Limit Determination:</p>
<p>Grain Size Analysis Preparation of sample b) Conducting sieve analysis Interpretation of results d) Plotting the grain size distribution curve Interpretation of the curve</p>
<p>Preparation of Unconfined Compression Test</p>
<p>Preparation of Standard Proctor Test</p>
<p>Preparation of Direct and Vane Shear Test on sandy soil samples Direct shear test apparatus</p>
<p>Preparation of Disturbed and Undisturbed Samples</p>

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LESSON PLAN

Name of the Faculty : MR. AMIT GUPTA

Discipline : Civil Engineering

Semester : 4th

Subject : SOFT SKILL

Lesson Plan Duration :15 weeks(from MARCH, 2023 to JUNE,2023)

Work load (Lecture / Practical) per week(in hours): practicals -02

Week	Practical Day	Topic (including assignment/ test)
1st	1st	• Soft Skills - Concept and Importance
	2nd	• Soft Skills - Concept and Importance
2nd	3rd	• Communication Skills- Improving verbal communication
	4th	• Communication Skills- Improving verbal communication
3rd	5th	• Report Writing
	6th	• Report Writing
4th	7th	• Method to enhance memory and concentration
	8th	• Method to enhance memory and concentration
5th	9th	• Component of overall personality- Dressing sense/etiquettes/body language etc.
	10th	• Component of overall personality- Dressing sense/etiquettes/body language etc.
6th	11th	• Sports
	12th	• NCC/NSS
7th	13th	• Sports
	14th	• NCC/NSS
8th	15th	• Sports
	16th	• NCC/NSS
9th	17th	• Sports
	18th	• NCC/NSS
10h	19th	Revision /Assignment
	20th	• NCC/NSS
11th	21th	Revision /Assignment
	22th	• NCC/NSS
12th	23th	Revision /Assignment
	24th	Revision /Assignment
13th	25th	

	26th	• Developing attitude towards safety. Disaster management.
14th	27th	• Developing attitude towards safety. Disaster management.
	28th	Revision /Assignment
15th	29th	• Cultural Event
	30th	• Cultural Event

LESSON PLAN

Name of the Faculty :MR. AMIT KUMAR

Discipline : CIVIL ENGG

Semester : 4TH

Subject : Surveying-II

Lesson Plan Duration 15 weeks(from MARCH, 2023 to JUNE,2023)

** Work Load(Lecture/Practical) per week(in hours):-Lectures : 03 Practical: 06

Week	Theory		Practical
	Lecture	Topic	
1	1st	Contouring:-Concept of contours, purpose of contouring, contour interval and horizontal equivalent,	1st
	2nd	factors effecting contour interval	2nd
	3rd	characteristics of contours, methods of contouring:	3rd
2	4th	Direct and indirect, use of stadia measurements in contour	4th
	5th	Drawing cross section from a contour map;	5th
	6th	marking alignment of a road, railway and a canal on a contour	6th
3	7th	computation of earth work and reservoir capacity from a contour map	7th
	8th	Theodolite Surveying:Working of a transit vernier theodolite,	8th
	9th	theodolite and their relation; temporary adjustments of a	9th
4	10th	concept of transiting, swinging, face left, face right and changing face	10th
	11th	measurement of horizontal and vertical angles.	11th
	12th	Prolonging a line (forward and backward)	12th
5	13th	measurement of bearing of a line; traversing by included angles and deflection angle method;	13th
	14th	traversing by stadia measurement	14th
	15th	theodolite triangulation,	15th
6	16th	Plotting a traverse; concept of coordinate and solution of	16th
	17th	errors in theodolite survey and precautions taken to minimize	17th
	18th	limits of precision in theodolite traversing.	18th
7	19th	Height of objects – accessible and non-accessible bases	19th

	20th	Tacho-metric surveying:-Tachometry,	20th
	21st	Instruments to be used in tachometry	21st
8	22nd	methods of tachometry, stadia system of tachometry,	22nd
	23rd	general principles of stadia tachometry,	23rd
	24th	general principles of stadia tachometry,	24th
9	25th	examples of stadia tachometry and Numerical problems.	25th
	26th	Curves:Simple Circular Curve: Need and definition of a simple circular curve; Elements of simple circular curve	26th
	27th	Degree of the curve, radius of the curve	27th
10	28th	(Apex point), tangent point, length of curve,	28th
	29th	long chord deflection angle,	29th
	30th	long chord deflection angle,	30th
11	31st	Apex distance and Mid-ordinate. Setting out of simple circular	31st
	32nd	Successive bisection of arcs - Offsets from the chord produced	32nd
	33rd	b) By tangential angles using a theodolite	33rd
12	34th	b) By tangential angles using a theodolite	34th
	35th	Revision/Assignment	35th
	36th	Revision/Assignment	36th
13	37th	Introduction to the use of Modern Surveying equipment and	37th
	38th	c) Total station	38th
	39th	d) Introduction to remote sensing, GIS and GP	39th
14	40th	Minor Instruments:-Introduction and use of minor instruments	40th
	41st	Use of planimeter for computing areas	41st
	42nd	Use of planimeter for computing areas	42nd
15	43rd	Revision	43rd
	44th	Assignment	44th
	45th	Assignment	45th

Practicals
Topic
Contouring:-Preparing a contour plan by radial line method by the use of a Tangent Clinometer/Tachometer
Preparation of master sheet
Preparation of master sheet
Preparing a contour plan by method of squares
Preparation of master sheet
Preparation of master sheet
Preparing a contour plan of a Road/Railway track/Canal by taking cross sections
Preparation of master sheet
Preparation of master sheet
Theodolite:Taking out the Theodolite, mounting on the tripod and placing it back in the box
Study of a transit vernier theodolite; temporary adjustments of theodolite
Study of a transit vernier theodolite; temporary adjustments of theodolite
Reading the vernier and working out the least count, measurement of horizontal angles by repetition and
Measurement of vertical angles and use of tachometric tables
Measurement of vertical angles and use of tachometric tables
Exercise/viva-voice
Measurement of magnetic bearing of a line
Measurement of magnetic bearing of a line
Running a closed traverse with a theodolite (at least five sides) and its plotting

LESSON PLAN (WSWWE)

Name of faculty MR.AMIT
 Discipline Civil Engineering
 Semester 4th
 Subject WSWWE

**** Work Load(Lecture/Practical) per week(in hours):- Lectures : 04 Practical-02**

Week	Theory	
	Lecture Day	Topic
1st	1st	Necessity and brief description of water supply system.
	2nd	Water requiremen Rate of demand and variation in rate of demand
	3rd	Per capita consumption for domestic,industrial,public and fire fighting usesas per BIS
	4th	Population Forecasting
	5th	Numerical problems
2nd	1st	Meaning of pure water and methods of analysis of water
	2nd	Physical, Chemical and bacteriological tests and their significance
	3rd	Standard of potable water as per Indian Standard
	4th	Maintenance of purity of water (small scale and large scale quantity,sedimentation
	5th	REVISION/DISCUSSION
3rd	1st	Coagulation flocculation - usual coagulation and their feeding
	2nd	Filtration - significance, types of filters, their suitability
4th	1st	Necessity of disinfection of water, forms of chlorination, break point chlorine,
	2nd	residual chlorine, application of chlorine Flow diagram of different treatment unit
	3rd	functions of Aeration fountain,mixer,floculator, classifier,slow and rapid sand filter
	4th	chlorination chamber Different types of pipes - cast iron, PVC, steel,
5th	1st	asbestos cement, concrete and lead pipes. Their suitability and uses,
	2nd	types of joints in different types of pipes.
	3rd	Sluice,air,reflux valves,relief valves, scour valves bib cocks, stop cocks, fire hydrant
	4th	water meters their working and uses Distribution site: Requirement of distribution
	5th	REVISION/DISCUSSION
6th	1st	Intermittent and continuous service reservoirs - types, necessity and accessories.
	2nd	Wastage of water - preventive measures Maintenance of distribution system
	3rd	Leakage detection Setting out alignment of pipes
	4th	Ex. for laying of pipes and precautions to be taken in laying pipes in black cottonsoil.
7th	1st	Handling, lowering beginning and jointing of pipes Testing of pipe lines
	2nd	Testing of pipe lines Use of boring rods
	3rd	Connections to water main
	4th	Water supply fixtures and installations and terminology related to plumbing
	5th	Purpose of sanitation Necessity of systematic collection and disposal of waste
8th	1st	Definition of terms in sanitary engineering Collection and conveyance of sewage
	2nd	Conservancy and water carriage systems, their advantages and Disadvantages
	3rd	Surface drains (only sketches) : various types, suitability
	4th	Types of sewage: Domestic, industrial, storm water and its seasonal variation
9th	1st	Types of sewerage systems, materials for sewers, their sizes and joints
	2nd	Location, function and construction features. Manholes,
	3rd	drop manholes, tank hole, catch basin, inverted siphon, flushing tanks

	4th	grease and oil traps, storm regulators, ventilating shafts
	5th	REVISION/DISCUSSION
10th	1st	checking the gradient with boning rods preparation of bedding
	2nd	handling and jointing testing and back filling of sewers/pipes.
	3rd	Construction of surface mains and different sections required
	4th	Properties of sewage and IS standards for analysis of sewage
	5th	Physical, chemical and bacteriological parameters
11th	1st	General composition of sewage and disposal methods Disposal by dilution
	2nd	Self purification of stream, Disposal by land treatment, Nuisance due to disposal
	3rd	Meaning and principle of primary and secondary treatment
	4th	activated sludge process their flow diagrams Introduction and uses of screens
12th	1st	grit chambers, detritus tanks, skimming tanks
	2nd	plainsedimentation tanks, primary clarifiers,
	3rd	secondary clarifiers filters, control beds, intermittent sand filters,
	4th	sludge treatment and disposal trickling filters,
13th	1st	oxidation ponds
	2nd	Aims of building drainage and its requirements
	3rd	Different sanitary fittings and installations
	4th	Traps, seals, causes of breaking seals
	5th	Revision of chapter 1
14th	1st	do
	2nd	chapter 2
	3rd	chapter3
	4th	do
	5th	chapter 4
15th	1st	do
	2nd	chapter 5
	3rd	do
	4th	chapter 6
	5th	do

	Practical
Practical Day	Topic
1st	To determine turbidity of water sample
2nd	To determine dissolved oxygen of given To determine dissolved oxygen of given
3rd	
4th	To determine pH value of water
5th	To perform jar test for coagulation
6th	To determine BOD of given sample
7th	To determine residual chlorine in water
8th	To determine conductivity of water and total dissolved solids
9th	To study the installation of Water meter

10th	To study the Connection of water supply of building with main
11th	To study the installation Water supply and sanitary fittings
12th	To study and demonstrate the joining threading of GI Pipes
3th	To determine turbidity of water sample
14th	To determine BOD of given sample
15th	To determine residual chlorine in water