LESSON PLAN OF 6th SEMESTER CIVIL ENGINEERING

Discipline :- CIVIL	Semester:- 6th	Name of the Teaching Faculty:- Jyotirmayee Sabar, Sr. Lect.
Subject:- ACT&E	No of Days/per Week Class Allotted :- 04	Semester From:- 14.02.2023 to 23.05.2023 No of Weeks:- 15

Week	Class Day	Theory Topics
1st	1st	**Fibers and Plastics-** Types of fibers- Steel, Carbon, glass fibers
	2nd	Use of fibers as construction material, properties of Fibers
	3rd	Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets
	4th	Use of plastic as construction material.
2nd	1st	Artificial Timbers – Properties and uses of artificial timber
	2nd	Types of artificial timber available in market
	3rd	Strength of artificial timber.
	4th	Miscellaneous materials – Properties and uses of acoustics materials
3rd	1st	Wall claddings, plaster boards, micro-silica
	2nd	Artificial sand, bonding agents, adhesives
	3rd	**Prefabrication** Introduction, necessity and scope of prefabrication of buildings
	4th	History of prefabrication, current uses of prefabrication
4th	1st	Types of prefabricated systems, classification of prefabrication
	2nd	Advantages and disadvantages of prefabrication,
	3rd	The theory and process of prefabrication
	4th	Design principle of prefabricated systems, types of prefabricated elements
5th	1st	modular coordination
	2nd	Indian standard recommendation for modular planning
	3rd	**Earthquake Resistant Construction** Building Configuration
	4th	Lateral Load resisting structures
6th	1st	Building characteristics
	2nd	Effect of structural irregularities-vertical irregularities
	3rd	plan configuration problems
	4th	Safety consideration during additional construction and alteration of existing Buildings.
7th	1st	Additional strengthening measures in masonry building-corner reinforcement, lintel band
	2nd	Sill band, plinth band, roof band, gable band
	3rd	**Retrofitting of Structures** Seismic retrofitting of reinforced concrete buildings
	4th	Seismic retrofitting of reinforced concrete buildings
8th	1st	Seismic retrofitting of reinforced concrete buildings
	2nd	Seismic retrofitting of reinforced concrete buildings
	3rd	Sources of weakness in RC frame building
	4th	Sources of weakness in RC frame building

9th	1st	Sources of weakness in RC frame building
	2nd	Classification of retrofitting techniques and their uses
	3rd	Classification of retrofitting techniques and their uses
	4th	**Building Services** Cold Water Distribution in high rise building, lay out of installation
10th	1st	Hot water supply – General principles for central plants-layout
	2nd	Sanitation –soil and waste water installation in high rise buildings
	3rd	Electrical services – i) requirements in high rise buildings ii) Layout of wiring - types of wiring
	4th	Fuses and their types , Earthing and their uses
11th	1st	Lighting – Requirement of lighting, Measurement of light intensity
	2nd	Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation
	3rd	Mechanical Services- Lifts, Escalator, Elevators – types and uses.
	4th	**Construction and earth moving equipments** Planning and selection of construction equipments
12th	1st	Planning and selection of construction equipments
	2nd	Study on earth moving equipments like drag line, tractor
	3rd	bulldozer, Power shovel
	4th	Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers
13th	1st	Smooth wheel rollers
	2nd	Pneumatic tired rollers
	3rd	vibrating compactors
	4th	Owning and operating cost – problems
14th	1st	Owning and operating cost – problems
	2nd	**Soil reinforcing techniques** Necessity of soil reinforcing
	3rd	Use wire mesh and geo-synthetics.
	4th	Use wire mesh and geo-synthetics.
15th	1st	Strengthening of embankments
	2nd	Slope stabilization in cutting and embankments by soil reinforcing techniques.
	3rd	Slope stabilization in cutting and embankments by soil reinforcing techniques.
	4th	Slope stabilization in cutting and embankments by soil reinforcing techniques.

13/02/23

Signature of the concerned Lecturer

13/02/23

Signature of the H.O.D

LESSON PLAN OF 6th SEMESTER CIVIL ENGINEERING

Discipline;**Civil Engg.**	Semester; **6th**	Name of The Teaching Faculty:- **Tapas Kumar Mallick**
Subject; **CONSTRUCTION MANAGEMENT**	No. of days/per week class allotted **; 04**	Semester From **. Date; 14.02.2023To Date ; 23.05.2023** No of Weeks : **15**
Week	**Class Day**	**Theory/Practical Topics**
1st	1st	**1.0:NTRODUCTION TO CONSTRUCTION MANAGEMENT** 1.1; Aims and objectives of construction management.
	2nd	1.2; Functions of construction management.
	3rd	1.3; The construction team components- Owner ,Engineer, Architect, Contractor –their functions and interrelationship and jurisdiction.
	4th	1.4:Resources for construction management – men, machines, money
2nd	1st	**2.0: Constructional Planning** 2.1: Importance of construction planning.
	2nd	2.2:Developing work breakdown structure for construction work.
	3rd	2.3: Construction planning stages-pre tender stage, post –tender stage.
	4th	2.4: Construction scheduling by Bar charts-preparation of Bar charts for simple construction work.
3rd	1st	2.5: Preparation of schedules for labour materials, machinery, finance for small works.
	2nd	2.6: Limitation of Bar charts.
	3rd	2.7: Construction scheduling by network techniques-definition of terms, PERT and CPM techniques, advantages and disadvantages of two techniques, network analysis, estimation of time and critical path, application of PERT and CPM techniques in sample construction works.
	4th	**3.0: Materials and stores Management** 3.1: Classification of stores- Storage of stock
4th	1st	Storage of stock
	2nd	3.2: Issue of materials –Indent ,Invoice ,Bin card
	3rd	Issue of materials –Indent ,Invoice ,Bin card
	4th	**4.0: Construction site Management:** 4.1: Job lay out-objectives, Review plans, specifications
5th	1st	lay out of equipments
	2nd	4.2: Location of equipment, organizing labour at site.
	3rd	4.3: Job lay out for different construction site,
	4th	4.4: Principles of storing material at site,

6th	1st	**5.0: Construction Organization:** 5.1: Introduction – Characteristics, Structure, importance,
	2nd	5.2: Organization types – line and staff, functions and their characteristics
	3rd	5.3: Principles of Organization – Meaning and significance of terms-control, authority, responsibility ,job & task.
	4th	5.4: Leadership- necessity, styles of leadership, role of leader.
7th	1st	5.6: Human relations – relations with subordinate, peers, supervisors, characteristics of group behavior, mob psychology,handling of grievances, absenteeism, labour welfare.
	2nd	5.7: Conflicts in organization – genesis of conflicts, types-intrapersonal, intergroup, resolving conflicts.
	3rd	**6.0: Construction Labour and Labour Management:** 6.1: Preparing labour schedule
	4th	6.2: Essential steps for optimum labour output.
8th	1st	6.3: Labour characteristics
	2nd	6.4: Wages & their payment
	3rd	6.5: Labour incentives
	4th	6.6: Motivation –Classification of motives, different approaches to motivation.
9th	1st	**7.0: Equipment Management** 7.1: Preparing the equipment schedule.
	2nd	7.2: Identification of different alternative equipment.
	3rd	7.3: Importance of Owning & operating costs in making decisions for hiring & purchase of equipment.
	4th	7.4: Inspection and testing of equipment.
10th	1st	7.5; Equipment maintenance and minor repairs
	2nd	Equipment maintenance and minor repairs
	3rd	**8.0: Quality Control:**
	4th	8.1: Concept of quality in construction .
11th	1st	8.2: Quality Standards – during construction ,after construction
	2nd	8.2: Quality Standards – during construction ,after construction
	3rd	destructive & non destructive methods.
	4th	**9.0: Monitoring Progress:**
12th	1st	9.1: Programme and progress of work.
	2nd	9.2: Work study
	3rd	9.2: Work study
	4th	9.3: Analysis and control of physical and financial progress corrective measures.
13th	1st	9.3: Analysis and control of physical and financial progress corrective measures.
	2nd	**10..0:Safety Management In Construction:** 10.1: Importance of safety
	3rd	10.2: Causes and effects of accidents in construction works
	4th	10.3: Safety measures in worksites for excavation, scaffolding, formwork, fabrication and errection, demolition.

14th	1st	10.4: Development of safety consciousness
	2nd	10.5: Safety legislation – Workman's compensation act, contract labour act.
	3rd	**11.Role of Vulnerability Atlas of India in construction projects** 11.1 Introduction to Vulnerability Atlas of India, Concepts of natural hazards and disasters and vulnerability profile of India. Definition of disaster related terms
	4th	11.2 Earthquake hazard and vulnerability, Magnitude and intensity scales of earthquake, seismic zones, earthquake hazard maps, types of structures and damage classification, effects in housing and resistant measures.
15th	1st	11.3 Wind / Cyclone hazard and vulnerability, wind speed and pressures, wind hazard and cyclone occurrence maps, storm surveys and cyclone resistant measures
	2nd	11.4 Flood hazard and vulnerability, Flood hazard and Flood prone areas of the country, General protection of habitants and flood resistant construction
	3rd	11.5 Landslides, Tsunamis and Thunderstorm hazards and vulnerability, Landslide & Thunderstorm incidence maps, Measures against Tsunami hazards.
	4th	11.6 Housing vulnerability risk tables and usage of vulnerability atlas of India, Inclusion of vulnerability atlas in Tender documents

13/2/23

13/2/23

LESSON PLAN OF 6th SEMESTER CIVIL ENGINEERING

Discipline :- CIVIL	Semester:- 6th	Name of the Teaching Faculty:- Mr.SWAYAN RANJAN MISRA
Subject:- LAND SURVEY-II	No of Days/per Week Class Allotted :- 05	Semester From:- **14.02.2023** To:- **23.05.2023** No of Weeks:- **15**

Week	Class Day	Theory Topics
1st	1st	**Introduction to Tacheometry**
	2nd	Principles, stadia constants determination .
	3rd	Stadia tacheometry with staff held vertical and with line of collimation horizontal
	4th	Stadia tacheometry with staff held vertical and with line of collimation inclined
	5th	Numerical problems
2nd	1st	Elevations and distances of staff stations
	2nd	Numerical problems
	3rd	**Introduction to Curve** compound, reverse and transition curve
	4th	Purpose & use of different types of curves in field
	5th	Elements of circular curves
3rd	1st	Numerical problems on circular curve
	2nd	Preparation of curve table for setting out
	3rd	Setting out of circular curve by chain and tape and by instrument angular methods (i) offsets from long chord, (ii) successive bisection of arc,
	4th	Setting out of circular curve by chain and tape and by instrument angular methods (iii) offsets from tangents, (iv) offsets from chord produced, (v) Rankine's method of tangent angles
	5th	Obstacles in curve ranging – point of intersection inaccessible
4th	1st	Beam & column, lapping, anchorage
	2nd	Effective span for beam & slab.
	3rd	**Introduction to Map** Fractional or Ratio Scale, Linear Scale, Graphical Scale
	4th	About Map, Map Scale and Map Projections
	5th	About Maps Convey Location and Extent
5th	1st	About Maps Convey characteristics of features
	2nd	About Maps Convey Spatial Relationship
	3rd	Classification of Maps 1 Physical Map 2 Topographic Map
	4th	3 Road Map 4 Political Map 5 Economic & Resources Map
	5th	Digital learning of different Maps by using smart class
6th	1st	**Introduction to Survey of India Map series.**
	2nd	Open Series map

	3rd	Defense Series Map
	4th	Map Nomenclature Quadrangle Name
	5th	Moment of resistance of the rectangular section.
7th	1st	Latitude, Longitude, UTM's
	2nd	Contour Lines
	3rd	Magnetic Declination
	4th	Public Land Survey System
	5th	Field Notes
8th	1st	**Introduction to Arial Photography** , Film, Focal Length, Scale
	2nd	Types of Aerial Photographs (Oblique, Straight)
	3rd	**Introduction to Photogrammetry:** Classification of Photogrammetry
	4th	Aerial Photogrammetry
	5th	Terrestrial Photogrammetry ;
9th	1st	Photogrammetry Process: Acquisition of Imagery using aerial and satellite platform
	2nd	Control Survey.
	3rd	Geometric Distortion in Imagery Application of Imagery and its support data Orientation and Triangulation
	4th	Stereoscopic Measurement X-parallax Y-parallax
	5th	DTM/DEM Generation Ortho Image Generation
10th	1st	**Introduction to Modern surveying Method**
	2nd	Principles, features and use of Micro-optic theodolite
	3rd	Principles, features and use of Digital Theodolite
	4th	Working principles of a Total Station
	5th	Set up and use of total station
11th	1st	Angle measurement by using total station.
	2nd	Distance measurement by using total station.
	3rd	the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry
	4th	Triangulation by using Total station
	5th	Field Demonstration of Total station
12th	1st	**Introduction to GPS** Working Principle of GPS,GPS Signals
	2nd	Errors of GPS, Positioning Methods
	3rd	**Introduction to DGPS** Base Station Setup Rover GPS Set up
	4th	Download, Post-Process and Export GPS data
	5th	Sequence to download GPS data from flashcards Sequence to Post-Process GPS data
13th	1st	Sequence to export post process GPS data Sequence to export GPS Time tags to file
	2nd	**Introduction to ETS**

	3rd	Distance Measurement and Angle Measurement by ETS
	4th	Leveling and Determining position by ETS
	5th	Reference networks Errors and Accuracy
14th	1st	**Introduction to GIS** Components of GIS, Integration of Spatial and Attribute Information
	2nd	Three Views of Information System Database or Table View, Map View and Model View
	3rd	Spatial Data Model Attribute Data Management and Metadata Concept
	4th	Prepare data and adding to Arc Map.
	5th	Organizing data as layers. Editing the layers.
15th	1st	Switching to Layout View Change page orientation.
	2nd	Removing Borders.
	3rd	Removing Borders.
	4th	Adding and editing map information.
	5th	Finalize the map
16th	1st	**DOUBT CLEARING CLASS AND REVISION & PREVIOUS FIVE YEARS QUESTION ANSWER DISCUSSION**
	2nd	
	3rd	
	4th	
	5th	

13-02-23

13/02/23

Discipline : **CIVIL ENGG**	Semester : **6TH**	Name of the Teaching Faculty: **TAPAS RANJAN MISHRA** Mr.
Subject: **CONCRETE TECHNOLOGY**	No. of days/per week class allotted: **04**	Semester From date : 14/02/2023 To Date: 23/05/2023 No. of Weeks: **15**
Week	Class Day	Theory / Practical Topics
1ST	1ST	Grades of concrete.
	2ND	Advantages and disadvantages of concrete.
	3RD	Previous year question discussion, Assignment
	4TH	Composition, hydration of cement,
2ND	1ST	water cement ratio and compressive strength,
	2ND	fineness of cement, setting time,
	3RD	soundness, types of cement.
	4TH	Previous year question discussion, Assignment
3RD	1ST	Classification and characteristics of aggregate,
	2ND	fineness modulus, grading of aggregate,I.S.383
	3RD	Quality of water for mixing and curing.
	4TH	Important functions,
4TH	1ST	classification of admixtures,
	2ND	I.S 9103, accelerating admixtures,
	3RD	retarding admixtures, water reducing admixtures,
	4TH	air containing admixtures
5TH	1ST	Previous year question discussion, Assignment
	2ND	Concept of fresh concrete, workability,
	3RD	slump test, compacting factor test,
	4TH	V-bee consistency test and flow test,
6TH	1ST	requirement of workability,I.S.1199.
	2ND	Previous year question discussion, Assignment
	3RD	Cube and cylinder compressive strengths,
	4TH	flexural strength of concrete,
7TH	1ST	stress-strain and elasticity,
	2ND	phenomena of creep and shrinkage, permeability,
	3RD	durability of concrete
	4TH	sulphate, chloride and acid attack on concrete, efflorescence.
8TH	1ST	Previous year question discussion, Assignment
	2ND	Introduction to Concrete mix Design
	3RD	Data or input required for mix design.
	4TH	Nominal mix concrete &design mix concrete.
9TH	1ST	Basic consideration for concrete mix design,
	2ND	Methods of proportioning concrete mix – I.S Code method of
	3RD	Previous year question discussion, Assignment

	4TH	Batching of materials,
10TH	1ST	mixing of concrete materials, transportation,
	2ND	Placing of concrete, compaction of concrete (vibrators),
	3RD	Formwork-requirements and types ,stripping of forms.
	4TH	Previous year question discussion, Assignment
11TH	1ST	Quality control of Concrete as per I.S.456,
	2ND	Factors causing the variations in the quality of concrete
	3RD	Mixing, Transporting, Placing &curing requirements of
	4TH	Inspection and Testing as per Clause 17 of IS:456.
12TH	1ST	Durability requirements of Concrete as per I.S:456.
	2ND	Previous year question discussion, Assignment
	3RD	Introduction to ready mix concrete,
	4TH	high performance concrete,
13TH	1ST	silica fume concrete, shot-crete concrete or gunitting.
	2ND	Previous year question discussion, Assignment
	3RD	Deterioration of concrete and its prevention:
	4TH	Types of deterioration,
14TH	1ST	prevention of concrete deterioration,
	2ND	corrosion of reinforcement, effects and prevention
	3RD	Previous year question discussion, Assignment
	4TH	Symptom, cause and prevention and remedy of defects
15TH	1ST	cracking of concrete due to different reasons.
	2ND	Repair of cracks for different purposes,
	3RD	selection of techniques, polymer based repairs, common types of repairs.
	4TH	Previous year question discussion, Assignment