LESSON PLAN OF 6TH SEMESTER CIVIL ENGINEERING(2021-22)

Discipline :- CIVIL	Semester:-6TH	Name of the Teaching Faculty: SUMAN SAHOO
Subject:- LAND SURVEY-II	No of Days/per Week Class Allotted :-05	Semester From:- 10-03-2022 To:- 18-07-2022 No of Weeks:- **20**

Week	Class Day	Theory/ Practical Topics
1st	1st	**TACHEOMETRY:** Principles, stadia constants determination
	2nd	-do-
	3rd	Stadia tacheometry with staff held vertical and with L.O.S horizontal
	4th	Stadia tacheometry with staff held vertical and with L.O.S inclined
	5th	numerical problems
2nd	1st	numerical problems
	2nd	numerical problems
	3rd	Elevations and distances of staff stations
	4th	numerical problems
	5th	**CURVES :** compound, reverse and transition curve definitions
3rd	1st	Purpose & use of different types of curves in field
	2nd	Elements of circular curves
	3rd	numerical problems
	4th	Preparation of curve table for setting out
	5th	Setting out of circular curve by (i) offsets from long chord, (ii) successive bisection of arc
4th	1st	(iii) offsets from tangents, (iv) offsets from chord produced, (v) Rankine's method of tangent angles
	2nd	Obstacles in curve ranging – point of intersection inaccessible
	3rd	**BASICS ON SCALE AND BASICS OF MAP:** Fractional or Ratio Scale, Linear Scale, Graphical Scale
	4th	What is Map, Map Scale and Map Projections
	5th	How Maps Convey Location and Extent
5th	1st	How Maps Convey characteristics of features
	2nd	How 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	6 Thematic Map 7 Climate Map
6th	1st	**SURVEY OF INDIA MAP SERIES:** Open Series map
	2nd	Defense Series Map
	3rd	Map Nomenclature : 1 Quadrangle Name
	4th	2 Latitude, Longitude, UTM's
	5th	3 Contour Lines
7th	1st	4 Magnetic Declination
	2nd	5 Public Land Survey System
	3rd	6 Field Notes
	4th	Numericals
	5th	Doubts Session
8th	1st	**BASICS OF AERIAL PHOTOGRAPHY, PHOTOGRAMMETRY, DEM AND ORTHO IMAGE GENERATION:** Aerial Photography

	2nd	1 Film, Focal Length, Scale 2 Types of Aerial Photographs (Oblique, Straight)
	3rd	Photogrammetry: 1 Classification of Photogrammetry
	4th	2 Aerial Photogrammetry 3 Terrestrial Photogrammetry
	5th	Photogrammetry Process: 1 Acquisition of Imagery using aerial and satellite platform
9th	1st	2 Control Survey 3 Geometric Distortion in Imagery Application of Imagery and its support data
	2nd	Orientation and Triangulation
	3rd	Stereoscopic Measurement 1 X-parallax 2 Y-parallax
	4th	4 DTM/DEM Generation
	5th	5 Ortho Image Generation
10th	1st	**MODERN SURVEYING METHODS** : 1 Principles, features and use of (i) Micro-optic theodolite digital theodolite
	2nd	Working principles of a Total Station
	3rd	1. Set up
	4th	2.use of total station to measure angles
	5th	3.distances of points under survey from total station
11th	1st	Distance measurement of co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation
	2nd	-do-
	3rd	Objective types question practice
	4th	-do-
	5th	Doubt Clearing session
12th	1st	**BASICS ON GPS & DGPS AND ETS:** GPS: - Global Positioning
	2nd	Working Principle of GPS,GPS Signals Errors of GPS, Positioning Methods
	3rd	DGPS: - Differential Global Positioning System
	4th	Base Station Setup , Rover GPS Set up
	5th	Download, Post-Process and Export GPS data Sequence to download GPS data from flashcards
13th	1st	Sequence to Post-Process GPS data ,Sequence to export post process GPS data
	2nd	Sequence to export GPS Time tags to file
	3rd	Electronic Total Station 1 Distance Measurement 2 Angle Measurement
	4th	3 Leveling 4 Determining position
	5th	Reference networks , Errors and Accuracy
14th	1st	**BASICS OF GIS AND MAP PREPARATION USING GIS** : Components of GIS
	2nd	Integration of Spatial and Attribute Information
	3rd	Three Views of Information System :Database or Table View, Map View and Model View
	4th	Spatial Data Model, Attribute Data Management and Metadata Concept
	5th	Prepare data and adding to Arc Map, Organizing data as layers
15th	1st	Editing the layers Switching to Layout View.
	2nd	Change page orientation, Removing Borders.
	3rd	Adding and editing map information. Finalize the map
	4th	PREVIOUS YEAR QUESTION
	5th	-do-
16th	1st	NUMERICAL PROBLEM SOLVING
	2nd	NUMERICAL PROBLEM SOLVING

	3rd	NUMERICAL PROBLEM SOLVING
	4th	NUMERICAL PROBLEM SOLVING
	5th	NUMERICAL PROBLEM SOLVING
17th	1st	DOUBT CLEARING CLASS
	2nd	DOUBT CLEARING CLASS
	3rd	DOUBT CLEARING CLASS
	4th	DOUBT CLEARING CLASS
	5th	DOUBT CLEARING CLASS
18th	1st	DOUBT CLEARING CLASS
	2nd	DOUBT CLEARING CLASS
	3rd	DOUBT CLEARING CLASS
	4th	PREVIOUS YEAR QUESTION
	5th	PREVIOUS YEAR QUESTION
19th	1st	PREVIOUS YEAR QUESTION
	2nd	PREVIOUS YEAR QUESTION
	3rd	PREVIOUS YEAR QUESTION
	4th	PREVIOUS YEAR QUESTION
	5th	PREVIOUS YEAR QUESTION
20 th	1st	PREVIOUS YEAR QUESTION
	2nd	PREVIOUS YEAR QUESTION
	3rd	PREVIOUS YEAR QUESTION
	4th	PREVIOUS YEAR QUESTION
	5th	PREVIOUS YEAR QUESTION

LESSON PLAN OF 6TH SEMESTER CIVIL ENGINEERING(2021-22)

Discipline :- CIVIL	Semester:-6TH	Name of the Teaching Faculty Amarapalli sahoo
Subject:- Advanced Construction Techniques & Equipment	No of Days/per Week Class Allotted :-04	Semester From:- 10-03-2022 To:- 18-07-2022 No of Weeks:- **20**

Week	Class Day	Theory/ Practical Topics
1st	1st	**Advanced construction materials** 1.1 Fibers and Plastics- Types of fibers- Steel, Carbon, glass fibre
	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	1.2 Artificial Timbers – Properties and uses of artificial timber
	2nd	Types of artificial timber available in market
	3rd	strength of artificial timber.
	4th	1.3 Miscellaneous materials – Properties and uses of acoustics materials
3rd	1st	wall claddings, plaster boards, micro-silica
	2nd	artificial sand, bonding agents, adhesives etc.
	3rd	Prefabrication 2.1 Introduction, necessity and scope of prefabrication of buildings
	4th	history of prefabrication, current uses of prefabrication
4th	1st	types of prefabricated systems
	2nd	classification of prefabrication, advantages and disadvantages of prefabrication,
	3rd	2.2 The theory and process of prefabrication
	4th	design principle of prefabricated systems
5th	1st	types of prefabricated elements, modular coordination
	2nd	2.3 Indian standard recommendation for modular planning.
	3rd	**Earthquake Resistant Construction** 3.1 Building Configuration
	4th	3.2 Lateral Load resisting structures
6th	1st	3.3 Building characteristics
	2nd	3.4 Effect of structural irregularities-vertical irregularities, plan configuration problems
	3rd	3.5 Safety consideration during additional construction and alteration of existing Buildings. 3.6 Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band etc.
	4th	4.1 Seismic retrofitting of reinforced concrete buildings :

7th	1st	Discussion about seismic retrofitting in building
	2nd	Seismic retrofitting of reinforced concrete buildings :
	3rd	Sources of weakness in RC frame building
	4th	Sources of weakness in RC frame building
8th	1st	-Classification of retrofitting techniques
	2nd	uses of retrofitting techniques
	3rd	**Building Services** 5.1 Cold Water Distribution in high rise building, lay out of installation
	4th	5.2 Hot water supply – General principles for central plants-layout
9th	1st	5.3 Sanitation –soil and waste water installation in high rise buildings
	2nd	5.4 Electrical services – i) requirements in high rise buildings
	3rd	ii) Layout of wiring - types of wiring iii) Fuses and their types
	4th	iv)Earthing and their uses
10th	1st	5.5 Lighting – Requirement of lighting, Measurement of light intensity
	2nd	5.6 Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation)
	3rd	5.6 Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation)
	4th	5.7 Mechanical Services- Lifts, Escalator
11th	1st	Elevators – types and uses.
	2nd	**Construction and earth moving equipments –** 6.1 Planning of construction equipment
	3rd	selection of construction equipments
	4th	6.2 Study on earth moving equipments like drag line
12th	1st	tractor, bulldozer, Power shovel
	2nd	6.3 Study and uses of compacting equipments like tamping rollers
	3rd	Smooth wheel rollers
	4th	Pneumatic tired rollers
13th	1st	vibrating compactors
	2nd	**Soil reinforcing techniques** 7.1 Necessity of soil reinforcing
	3rd	Necessity of soil reinforcing
	4th	
14th	1st	geo-synthetics
	2nd	7.3 Strengthening of embankments
	3rd	Slope stabilization in cutting and by soil reinforcing techniques.
	4th	Slope stabilization in embankments by soil reinforcing techniques.

15th	1st	PREVIOUS YEAR QUESTIONS DISCUSSION
	2nd	PREVIOUS YEAR QUESTIONS DISCUSSION
	3rd	DOUBT CLEARING CLASS
	4th	DOUBT CLEARING CLASS
16th	1st	PREVIOUS YEAR QUESTIONS DISCUSSION
	2nd	PREVIOUS YEAR QUESTIONS DISCUSSION
	3rd	PREVIOUS YEAR QUESTIONS DISCUSSION
	4th	PREVIOUS YEAR QUESTIONS DISCUSSION
17th	1st	PREVIOUS YEAR QUESTIONS DISCUSSION
	2nd	PREVIOUS YEAR QUESTIONS DISCUSSION
	3rd	PREVIOUS YEAR QUESTIONS DISCUSSION
	4th	
18th	1st	DOUBT CLEARING CLASS
	2nd	DOUBT CLEARING CLASS
	3rd	DOUBT CLEARING CLASS
	4th	DOUBT CLEARING CLASS
19th	1st	DOUBT CLEARING CLASS
	2nd	DOUBT CLEARING CLASS
	3rd	DOUBT CLEARING CLASS
	4th	DOUBT CLEARING CLASS
20th	1st	DOUBT CLEARING CLASS
	2nd	DOUBT CLEARING CLASS
	3rd	DOUBT CLEARING CLASS
	4th	

LESSON PLAN OF 6TH SEMESTER CIVIL ENGINEERING(2021-22)

Discipline :- CIVIL	Semester:-6TH	Name of the Teaching Faculty Swastik pradhan
Subject:- CONCRETE TECHNOLOGY	No of Days/per Week Class Allotted :-04	Semester From:- 10-03-2022 To:- 18-07-2022 No of Weeks:- **20**

Week	Class Day	Theory/ Practical Topics
1st	1st	**Concrete as a construction material:** 1.1 Grades of concrete.
	2nd	1.2 Advantages and disadvantages of concrete.
	3rd	**Cement:** 2.1 Composition
	4th	hydration of cement, water cement ratio
2nd	1st	compressive strength, fineness of cement, setting time, soundness
	2nd	types of cement
	3rd	**Aggregate, Water and Admixtures:** 3.1 Classification and characteristics of aggregate
	4th	fineness modulus, grading of aggregate,I.S.383
3rd	1st	3.2 Quality of water for mixing and curing
	2nd	3.3 Important functions, classification of admixtures, I.S 9103
	3rd	accelerating admixtures, retarding admixtures
	4th	water reducing admixtures, air containing admixtures
4th	1st	**Properties of fresh concrete:** 4.1 Concept of fresh concrete, workability
	2nd	slump test
	3rd	compacting factor test
	4th	V-bee consistency test
5th	1st	FLOW TEST
	2nd	requirement of workability,I.S.1199.
	3rd	**Properties of hardened concrete:** 5.1 Cube and cylinder compressive strengths,
	4th	flexural strength of concrete
6th	1st	stress-strain and elasticity
	2nd	phenomena of creep and shrinkage
	3rd	permeability, durability of concrete
	4th	sulphate, chloride and acid attack on concrete, efflorescence.
7th	1st	**Concrete mix Design** 6.1 a) Introduction b) Data or input required for mix design. 6.2 Nominal mix concrete &design mix concrete. 6.3 Basic consideration for concrete mix design, Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262)
	2nd	b) Data or input required for mix design.
	3rd	6.2 Nominal mix concrete & design mix concrete
	4th	6.3 Basic consideration for concrete mix design

8th	1st	Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262)
	2nd	NUMERICAL PROBLEM SOLVING
	3rd	7.1 Batching of materials, mixing of concrete materials,
	4th	transportation, placing of concrete
9th	1st	compaction of concrete (vibrators),
	2nd	Curing of concrete
	3rd	Formwork-requirements and types
	4th	stripping of forms. (Concepts only)
10th	1st	**Inspection and Quality Control of Concrete** 10.1 Quality control of Concrete as per I.S.456
	2nd	Factors causing the variations in the quality of concrete
	3rd	10.2 Mixing, Transporting as per I.S.456.
	4th	Placing &curing requirements of Concrete as per I.S.456.
11th	1st	10.3 Inspection as per Clause 17 of IS:456.
	2nd	Testing as per Clause 17 of IS:456.
	3rd	10.4 Durability requirements of Concrete as per I.S:456.
	4th	**Special Concrete** 11.1 Introduction to ready mix concrete
12th	1st	high performance concrete
	2nd	silica fume concrete
	3rd	shot-crete concrete or gunitting (Concepts only).
	4th	**Deterioration of concrete and its prevention:** 12.1 Types of deterioration
13th	1st	prevention of concrete deterioration
	2nd	corrosion of reinforcement
	3rd	effects and prevention
	4th	effects and prevention
14th	1st	**Repair technology for concrete structures:** 13.1 Symptom, cause and prevention and remedy of defects during construction, cracking of concrete due to different reasons. Repair of cracks for different purposes, selection of techniques, polymer based repairs, common types of repairs.
	2nd	prevention and remedy of defects during construction
	3rd	cracking of concrete due to different reasons
	4th	Repair of cracks for different purposes
15th	1st	selection of techniques, polymer based repairs
	2nd	common types of repairs.
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE

16st	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
17nd	1st	DOUBT CLEARING CLASS
	2nd	DOUBT CLEARING CLASS
	3rd	DOUBT CLEARING CLASS
	4th	DOUBT CLEARING CLASS
18rd	1st	DOUBT CLEARING CLASS
	2nd	DOUBT CLEARING CLASS
	3rd	DOUBT CLEARING CLASS
	4th	DOUBT CLEARING CLASS
19th	1st	RIVISION
	2nd	RIVISION
	3rd	RIVISION
	4th	RIVISION
20th	1st	RIVISION
	2nd	RIVISION
	3rd	RIVISION

LESSON PLAN OF 6TH SEMESTER CIVIL ENGINEERING(2021 -22)

Discipline :- CIVIL	Semester:-6TH	Name of the Teaching Faculty Ananta biswal
Subject:- CONSTRUCTION MANAGEMENT	No of Days/per Week Class Allotted :-04	Semester From:- 10-03-2022 To:- 18-07-2022 No of Weeks:- **20**

Week	Class Day	Theory/ Practical Topics
1st	1st	**Introduction To Construction Management** 1.1 Aims and objectives of construction management.
	2nd	1.2 Functions of construction management
	3rd	1.3The construction team components-owner,engineer,architect,contractor-their functions and interrelationship and jurisdiction.
	4th	1.4 Resources for construction management-men,machines,materials,money
2nd	1st	**2 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 works
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-defination of terms ,PERT and CPM techniques, advantages and disadvantages of two techniques, network analysis, estimation of time and critical path
	4th	**3 Materials and Stores Management** 3.1 Classification of Stores-storage of stock
4th	1st	Classification of storage of stock
	2nd	3.2 Issue of materials-indent , invoice, bin card
	3rd	Issue of materials invoice
	4th	Issue of materialsd bin card
5th	1st	**4.0 Construction Site Management** 4.1 Job Lay out-Objectives, Review plans
	2nd	specifications, Lay out of equipments.
	3rd	4.2 Location of equipment, organizing labour at site. 4.3 Job lay out for different construction sites
	4th	4.4 Principle of storing material at site.
6th	1st	**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	5.5 Human relations-relations with subordinates, peers, Supervisors, characteristics of group behavior, mob psychology, handling of grievances, absenteeism, labour welfare.
	2nd	5.6 Conflicts in organization-genesis of conflicts, types-intrapersonal, interpersonal, intergroup, resolving conflicts.
	3rd	**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	**Equipment Management** 7.1 Preparing the equipment schedule
	2nd	7.2 Identification of different alternative equipment
	3rd	7.3 Importance of Owning costs in making decisions for hiring & purchase of equipment
	4th	Importance of operating costs in making decisions for hiring & purchase of equipment
10th	1st	7.4 Inspection and testing of equipment
	2nd	7.5 Equipment maintenance
	3rd	**Quality Control** 8.1 Concept of quality in construction
	4th	8.2 Quality Standards- after construction
11th	1st	Destructive methods.
	2nd	non destructive methods.
	3rd	**9 Monitoring Progress** 9.1 Programme of work
	4th	progress of work
12th	1st	9.2 Work study
	2nd	9.3 Analysis and control of physical progress corrective measures
	3rd	Analysis and control of financial progress corrective measures
	4th	**Safety Management In Construction** 10.1 Importance of safety
13th	1st	10.2 causes and effects of accidents in construction works
	2nd	10.3 Safety measures in worksites for excavation, scaffolding, formwork, fabrication and erection, demolition.
	3rd	10.4 Development of safety consciousness
	4th	10.5 Safety legislation- Workman's compensation act, contract

		labour act.
14th	1st	**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.
	2nd	11.2 Earthquake hazard and vulnerability, Magnitude and intensity scales of earthquake, seismic zones
	3rd	earthquake hazard maps, types of structures and damage classification, effects in housing and resistant measures
	4th	11.3 Wind / Cyclone hazard and vulnerability, wind speed and pressures, wind hazard and cyclone occurrence maps, storm surveys and cyclone resistant measures.
15th	1st	11.4 Flood hazard and vulnerability, Flood hazard and Flood prone areas of the country, General protection of habitants and flood resistant construction
	2nd	11.5 Landslides, Tsunamis and Thunderstorm hazards and vulnerability, Landslide & Thunderstorm incidence maps, Measures against Tsunami hazards.
	3rd	11.6 Housing vulnerability risk tables and usage of vulnerability atlas of India, Inclusion of vulnerability atlas in Tender documents
	4th	PREVIOUS YEAR QUESTIONS DISCUSSION
16th	1st	Revision
	2nd	Revision
	3rd	Revision
	4th	Revision
17th	1st	Revision
	2nd	Revision
	3rd	Revision
	4th	Revision
18th	1st	PREVIOUS YEAR QUESTIONS DISCUSSION
	2nd	PREVIOUS YEAR QUESTIONS DISCUSSION
	3rd	PREVIOUS YEAR QUESTIONS DISCUSSION
	4th	PREVIOUS YEAR QUESTIONS DISCUSSION
19th	1st	PREVIOUS YEAR QUESTIONS DISCUSSION
	2nd	Revision
	3rd	Revision
	4th	Revision
20th	1st	PREVIOUS YEAR QUESTIONS DISCUSSION
	2nd	PREVIOUS YEAR QUESTIONS DISCUSSION
	3rd	PREVIOUS YEAR QUESTIONS DISCUSSION
	4th	PREVIOUS YEAR QUESTIONS DISCUSSION