

R.K INSTITUTE OF ENGINEERING & TECHNOLOGY
At/Po: Kantapada-Apuja, Niali, Dist- Cuttack, Odisha

DEPARTMENT OF CIVIL ENGINEERING
LESSON PLAN

Discipline: Civil Engg	Semester : 6th	Name of the Teaching faculty: Annapurna Sethy	STATUS
Subject: Advanced construction Technology & Equipment Th-3	No of Days/Week class allotted: 4	Semester from Date: 17/02/23 To Date: 25/05/23 No of weeks: 16	
Week	Class Day	Topics	
1st	1st	Advanced construction materials Fibers and Plastics	Completed
	2nd	Use of fibers as construction material	
	3rd	properties of Fibers	
	4th	PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets.	
2nd	1st	Use of plastic as construction material	Completed
	2nd	Artificial Timbers – Properties	
	3rd	uses of artificial timber	
	4th	Types of artificial timber available in market, strength of artificial timber	
3rd	1st	Properties and uses of acoustics materials	Completed
	2nd	wall claddings, plaster boards, micro-silica, artificial sand	
	3rd	bonding agents, adhesives	
	4th	Introduction, necessity and scope of prefabrication of buildings	
4th	1st	history of prefabrication, current uses of prefabrication	Completed
	2nd	Types of prefabricated systems, classification of prefabrication	
	3rd	advantages and disadvantages of prefabrication	
	4th	The theory and process of prefabrication	
5th	1st	design principle of prefabricated systems	Completed
	2nd	types of prefabricated elements	
	3rd	modular coordination, Indian standard recommendation for modular planning	
	4th	Earthquake Resistant Construction, Building Configuration	
6th	1st	Lateral Load resisting structures	Completed
	2nd	Building characteristics	
	3rd	Effect of structural irregularities-vertical irregularities	
	4th	plan configuration problems	
7th	1st	Safety consideration during additional construction and alteration of existing Buildings	Completed
	2nd	Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band	
	3rd	plinth band, roof band, gable band	
	4th	Retrofitting of Structures	

8th	1st	Seismic retrofitting of reinforced concrete buildings	Completed	
	2nd	Seismic retrofitting of reinforced concrete buildings		
	3rd	Seismic retrofitting of reinforced concrete buildings		
	4th	Sources of weakness in RC frame building		
9th	1st	Classification of retrofitting techniques and their uses		
	2nd	Classification of retrofitting techniques and their uses		
	3rd	Building Services, Cold Water Distribution in high rise building, lay out of installation		
	4th	Hot water supply – General principles for central plants-layout		
10th	1st	Sanitation – soil and waste water installation in high rise buildings		Completed
	2nd	Electrical services – i) requirements in high rise buildings ii) Layout of wiring		
	3rd	types of wiring		
	4th	Fuses and their types		
11th	1st	Earthing and their uses	Completed	
	2nd	Lighting – Requirement of lighting, Measurement of light intensity		
	3rd	Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation		
	4th	Mechanical Services- Lifts, Escalator, Elevators – types and uses		
12th	1st	Construction and earth moving equipment, Planning and selection of construction equipment	Completed	
	2nd	Construction and earth moving equipment, Planning and selection of construction equipment		
	3rd	Study on earth moving equipment like drag line, tractor, bulldozer, Power shovel		
	4th	Study and uses of compacting equipment like tamping rollers, Smoothwheel rollers, Pneumatic tired rollers and vibrating compactors		
13th	1st	Owning and operating cost – problems	Completed	
	2nd	Owning and operating cost – problems		
	3rd	Owning and operating cost – problems		
	4th	Owning and operating cost – problems		
14th	1st	Necessity of soil reinforcing	Completed	
	2nd	Use wire mesh and geo-synthetics		
	3rd	Use wire mesh and geo-synthetics		
	4th	Strengthening of embankments		
15th	1st	Strengthening of embankments	Completed	
	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		
16th	1st	CLASS TEST 3, PREVIOUS YEAR QUESTIONS, QUIZ		

Learning Resources:

Sl No.	Author Name	Name of the Book
1	Agrawal & Shrikhande	Earthquake Resistant Design of Structures
2	Swami Saran	Reinforced Soil and its Engineering applications
3	M.R. Samal	Advance Construction and Equipment



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LESSON PLAN


Discipline :Civil Engg.	Semester: 6th	Name of the Teaching faculty: Monalin Behera	Status
Subject: Concrete Technology Th-4	No of Days/Week class allotted: 4	Semester from Date: 17/02/23 To Date: 25/05/23 No of weeks: 16	
Week	ClassDay	Topic	
1st	1st	Concrete as a construction material: Grades of concrete.	Complete
	2nd	Advantages and disadvantages of concrete.	
	3rd	Cement: Composition, hydration of cement	
	4th	water cement ratio and compressive strength	
2nd	1st	fineness of cement, setting time	Complete
	2nd	soundness, types of cement.	
	3rd	Aggregate, Water and Admixtures: Classification and characteristics of aggregate	
	4th	fineness modulus, grading of aggregate, I.S.383	
3rd	1st	Quality of water for mixing and curing.	Complete
	2nd	Important functions, classification of admixtures	
	3rd	accelerating admixtures, retarding admixtures,	
	4th	water reducing admixtures, air containing admixtures	
4th	1st	Properties of fresh concrete: Concept of fresh concrete, workability	Complete
	2nd	slump test, compacting factor test	
	3rd	slump test, compacting factor test	
	4th	slump test, compacting factor test	
5th	1st	V-bee consistency test and flow test, requirement of workability	Complete
	2nd	V-bee consistency test and flow test, requirement of workability	
	3rd	Properties of hardened concrete: Cube and cylinder compressive strengths	
	4th	flexural strength of concrete	
6th	1st	stress-strain and elasticity, phenomena of creep and shrinkage	Complete
	2nd	stress-strain and elasticity, phenomena of creep and shrinkage	
	3rd	permeability, durability of concrete	
	4th	sulphate, chloride and acid attack on concrete, efflorescence	
7th	1st	sulphate, chloride and acid attack on concrete, efflorescence	Complete
	2nd	Concrete mix Design a) Introduction	
	3rd	b) Data or input required for mix design	


	4th	Nominal mix concrete & design mix concrete.	
8th	1st	Basic consideration for concrete mix design	complete
	2nd	Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262)	
	3rd	Production of concrete: Batching of materials	
	4th	mixing of concrete materials, transportation	
9th	1st	placing of concrete, compaction of concrete (vibrators)	complete
	2nd	Curing of concrete, Formwork-requirements and types ,stripping of forms.	
	3rd	Curing of concrete, Formwork-requirements and types ,stripping of forms.	
	4th	Curing of concrete, Formwork-requirements and types ,stripping of forms.	
10th	1st	Inspection and Quality Control of Concrete Quality control of Concrete as per I.S.456,	complete
	2nd	Factors causing the variations in the quality of concrete	
	3rd	Mixing, Transporting, Placing & curing requirements of Concrete as per I.S.456.	
	4th	Mixing, Transporting, Placing & curing requirements of Concrete as per I.S.456.	
11th	1st	Inspection and Testing as per Clause 17 of IS:456.	complete
	2nd	Durability requirements of Concrete as per I.S:456	
	3rd	Special Concrete Introduction to ready mix concrete	
	4th	high performance concrete	
12th	1st	high performance concrete	complete
	2nd	silica fume concrete	
	3rd	shot-crete concrete or gunnitting (Concepts only).	
	4th	shot-crete concrete or gunnitting (Concepts only).	
13th	1st	Deterioration of concrete and its prevention: Types of deterioration,	complete
	2nd	prevention of concrete deterioration	
	3rd	prevention of concrete deterioration	
	4th	corrosion of reinforcement	
14th	1st	effects and prevention	complete
	2nd	effects and prevention	
	3rd	Repair technology for concrete structures: Symptom, cause and prevention and remedy of defects during construction	
	4th	Symptom, cause and prevention and remedy of defects during construction	
15th	1st	cracking of concrete due to different reasons.	complete
	2nd	Repair of cracks for different purposes	
	3rd	selection of techniques, polymer based repairs, common types of repairs.	
	4th	selection of techniques, polymer based repairs, common types of repairs.	
16th	1st	CLASS TEST 3, PREVIOUS YEAR QUESTIONS, QUIZ	

Learning Resources:

Sl No.	Author Name	Name of the Book
1	M.S Shetty & A.K.Jain	Concrete Technology
2	M.L.Gambhir	Concrete Technology
3	A R Santhakumar	Concrete Technology


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Discipline: Civil Engg	Semester: 6th	Name of the Teaching faculty: <i>Sipra Dash</i>	Status
Subject: Land Survey-II Th-1	No of Days/Week class allotted: 5 days	Semester from Date: <i>17/02/23</i> To Date: <i>25/05/23</i> No of weeks: <i>16</i>	
Week	Class Day	Topics	
1st	1st	TACHEOMETRY: Principles, stadia constants determination	<i>Completed</i>
	2nd	Stadia tacheometry with staff held vertical and with line of collimation horizontal or inclined, numerical problems	
	3rd	Stadia tacheometry with staff held vertical and with line of collimation horizontal or inclined, numerical problems	
	4th	Stadia tacheometry with staff held vertical and with line of collimation horizontal or inclined, numerical problems	
	5th	Elevations and distances of staff stations – numerical problems	
2nd	1st	Elevations and distances of staff stations – numerical problems	<i>Completed</i>
	2nd	Elevations and distances of staff stations – numerical problems	
	3rd	Elevations and distances of staff stations – numerical problems	
	4th	Elevations and distances of staff stations – numerical problems	
	5th	CURVES: compound, reverse and transition curve, Purpose & use of different types of curves in field	
3rd	1st	Elements of circular curves, numerical problems	<i>Completed</i>
	2nd	Elements of circular curves, numerical problems	
	3rd	Preparation of curve table for setting out	
	4th	Setting out of circular curve by chain and tape and by instrument angular methods (i) offsets from long chord,	
	5th	(ii) successive bisection of arc, (iii) offsets from tangents, (iv) offsets from chord produced	
4th	1st	(v) Rankine's method of tangent angles (No derivation)	<i>Completed</i>
	2nd	Obstacles in curving – point of intersection inaccessible	
	3rd	BASIC SCALES AND BASIC 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 Physical Map, Topographic Map	
	4th	Road Map, Political Map	

6th	1st	SURVEY OF INDIA MAP SERIES: Open Series map	Completed
	2nd	Defense Series Map, Map Nomenclature, Quadrangle Name	
	3rd	Latitude, Longitude, UTM's, Contour Lines	
	4th	Magnetic Declination	
	5th	Public Land Survey System	
7th	1st	BASICS OF AERIAL PHOTOGRAPHY, PHOTOGRAMMETRY, DEM AND ORTHO IMAGE GENERATION:	Completed
	2nd	Aerial Photography: Film, Focal Length, Scale	
	3rd	Types of Aerial Photographs (Oblique, Straight) Photogrammetry:	
	4th	Photogrammetry: Classification of Photogrammetry	
	5th	Aerial Photogrammetry	
8th	1st	Terrestrial Photogrammetry	Completed
	2nd	Photogrammetry Process: Acquisition of Imagery using aerial and satellite platform	
	3rd	Control Survey Geometric Distortion in Imagery	
	4th	Application of Imagery and its support data Orientation and Triangulation	
	5th	Stereoscopic Measurement X-parallax Y-parallax	
9th	1st	DTM/DEM Generation Ortho Image Generation	Completed
	2nd	MODERN SURVEYING METHODS : Principles, features and use of (i) Micro-optic theodolite, digital theodolite	
	3rd	Working principles of a Total Station (Set up and use of total station to measure angles, distances of points under survey from total station and the co-ordinates (X, Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation.	
	4th	BASICS OF AERIAL PHOTOGRAPHY, PHOTOGRAMMETRY, DEM AND ORTHO IMAGE GENERATION:	
	5th	Aerial Photography: Film, Focal Length, Scale	
10th	1st	Types of Aerial Photographs (Oblique, Straight) Photogrammetry:	Completed
	2nd	Photogrammetry: Classification of Photogrammetry	

	3rd	Working principles of a Total Station (Set up and use of total station to measure angles, distances of points under survey from total station and the co-ordinates (X, Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation.	
	4th	BASICS ON GPS & DGPS AND ETS: GPS:-Global Positioning	Completed
	5th	Working Principle of GPS, GPS Signals,	
11th	1st	Errors of GPS, Positioning Methods	Completed
	2nd	DGPS:-Differential Global Positioning System	
	3rd	Base Station Setup Rover GPS Set up	
	4th	Download, Post-Process and Export GPS data	
	5th	Sequence to download GPS data from flashcards	
12th	1st	Sequence to Post-Process GPS data	Completed
	2nd	Sequence to export post process GPS data	
	3rd	Sequence to export GPS Time tags to file	
	4th	Sequence to download GPS data from flashcards	
13th	5th	Distance Measurement	
	1st	Angle Measurement	

-: LESSON PLAN :-

Discipline	Semester	Name of the teaching faculty:-
Subject: <u>CM</u>	No. Of days / per week class allotted:-	Semester <u>6th</u> , from date: <u>14/03/22</u> To Date: <u>10/06/22</u> No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
<u>CH-1</u> FIRST	1st <u>14/03/2022</u>	Introduction to construction management - Aims and objectives of construction management.
	2nd <u>15/03/2022</u>	Functions of construction management.
	3rd <u>17/03/2022</u>	The construction team components - owner, engineer, architect, contractors - their functions.
	4th <u>21/03/2022</u>	Interrelationship and Jurisdiction.
	5th	
<u>CH-2</u> SECOND	1st <u>22/03/2022</u>	Resources for construction management - men, machines, materials, money.
	2nd <u>24/03/2022</u>	Construction Planning - Importance of construction planning.
	3rd <u>25/03/2022</u>	Developing work breakdown structure for construction work.
	4th <u>28/03/2022</u>	Construction Planning stages - Pre-tender stage, Post-tender stage.
	5th	
THIRD	1st <u>29/03/2022</u>	Construction scheduling by bar charts & Preparation of Bar charts for simple construction works.
	2nd <u>31/03/2022</u>	Preparation of scheduling for labour, material, machinery, finance, for small works.
	3rd <u>04/04/2022</u>	Limitation of Bar charts.
	4th <u>05/04/2022</u>	Construction scheduling by network techniques, definition of terms.
	5th	
FORTH	1st <u>07/04/2022</u>	PERT and CPM techniques.
	2nd <u>08/04/2022</u>	Advantages and dis-advantages of two techniques Network analysis.
	3rd <u>11/04/2022</u>	estimation of time and critical path.
	4th <u>12/04/2022</u>	Application of PERT and CPM techniques in sample construction works.
	5th	

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Discipline	Semester	Name of the teaching faculty:-
Subject.	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-
Week	Class day.	Theory/ Practical Topics :
FIRST	1st 18/04/2022	Materials and Stores Management - classification of stores - storage of stock.
	2nd 18/04/2022	
	3rd 19/04/2022	Issue of Materials - Indent, invoice, bill of lading. Construction site Management - Job, Layout objectives, Review plans, specifications, layout. Location of equipment, organizing labour at site.
	4th 19/04/2022	
	5th 19/04/2022	
SECOND	1st 27/04/2022	Job lay out for different construction sites.
	2nd 28/04/2022	
	3rd 29/04/2022	Principle of storing material at site. Construction organization - Introduction - characteristics, structure, importance. organization types - line and staff, functions.
	4th 30/04/2022	
	5th 02/05/2022	
THIRD	1st 05/05/2022	Their characteristics.
	2nd 05/05/2022	
	3rd 06/05/2022	Principles of organizing - meaning and significance of terms - central. Authority, responsibility, Job and task. Leadership - necessity, styles of leadership role of leader.
	4th 06/05/2022	
	5th 06/05/2022	
FOURTH	1st 09/05/2022	Human relations - relations with subordinates, peers, supervisors, characteristics of group behaviour, motivation, handling of grievances at site, labour welfare.
	2nd 09/05/2022	
	3rd 10/05/2022	Conflict in organization - genesis of conflict types, Intra personal, Interpersonal, Intergroup, resolving conflict. Construction Labour and Labour Management - Preparing Labour schedule. Essential steps for optimum labour output.
	4th 10/05/2022	
	5th 11/05/2022	

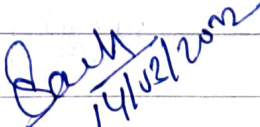
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Subject	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
FIRST	1st 22/05/2022	Essential steps for optimum labour output.
	2nd 19/05/2022	Labour characteristics.
	3rd 13/05/2022	wages and their payment.
	4th 13/05/2022	Labour incentives.
	5th	
SECOND CH 7	1st 18/05/2022	Motivation - classification of motives/different approach to Motivation.
	2nd 18/05/2022	Equipment Management - Preparing the equipment schedule.
	3rd 23/05/2022	Identification of different alternative equipment.
	4th 23/05/2022	Importance of owning and operating costs in making decisions for hiring & purpose of equipment.
	5th	
THIRD CH 8	1st 24/05/2022	Inspection and testing of equipment.
	2nd 24/05/2022	Equipment Maintenance.
	3rd 26/05/2022	Quality Control - Concept of quality in construction.
	4th 26/05/2022	Quality standards - during construction, after construction destructive and non destructive methods.
	5th	
FORTH CH 9 CH 10	1st 27/05/2022	Monitoring Progress! - Programme and Progress of work.
	2nd 27/05/2022	Work study.
	3rd 28/05/2022	Analysis and control of physical and financial programmes - corrective measures.
	4th 28/05/2022	Safety Management in construction! - Importance of safety.
	5th	

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Discipline	Semester	Name of the teaching faculty:-
Subject.	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
FIRST	1st 02/06/2022	causes and effects of accident in construction works.
	2nd 02/06/2022	Safety measures in worksites for excavation scaffolding formwork, fabrication and erection of steel structure.
	3rd 03/06/2022	Development of safety consciousness.
	4th 03/06/2022	safety registration - workmans compensation act, contract labour act.
	5th	
SECOND	1st 06/06/2022	Role of vulnerability All of India in construction project:- Introduction of vulnerability all over India.
	2nd 06/06/2022	Concept of natural hazards and disaster.
	3rd 07/06/2022	and vulnerability profile of India, definition of related terms.
	4th 07/06/2022	Earthquake hazard and vulnerability, Magnitude and Intensity Scales of earth quake, seismic zones, earthquake hazard maps, types of structural and damage class.
	5th	
THIRD	1st 09/06/2022	wind, cyclone hazard and vulnerability, wind speed and pressure, wind hazard and cyclone, cyclone maps, storm survival and cyclone resistance measures.
	2nd 09/06/2022	Flood hazards and vulnerability, Flood hazard and flood prone areas of the country, general protection of habitat and flood resistance construction.
	3rd 09/06/2022	Land slides, Tsunami and thunderstorm hazards and vulnerability, Land slide.
	4th 10/06/2022	and thunderstorm incidence maps, measures against TSUNAMI hazards.
	5th	
FOURTH	1st 10/06/2022	Housing vulnerability risk tables and usage of vulnerability atlas of India.
	2nd 10/06/2022	Inclusion of vulnerability atlas in Tender documents.
	3rd	
	4th	
	5th	


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Discipline