DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY
CIVIL ENGINEERING	6TH	Mrs.PRANATI PANDA , GF(CIVIL)
SUB - CONSTRUCTION MANAGEMENT(TH2)		NO.OF DAYS PER WEEK CLASS ALLOTED :- 04
NO.OF WEEKS :- 15		COMMENCEMENT DATE DEC - 22, 2025 (SUMMER)
WEEKS	CLASS DAYS	THEORY TOPICS
		Introduction To Construction Management
1ST WEEK	1st	Aims and objectives of construction management.
	2ND	Functions of construction management.
	3RD	The construction team components, owner, engineer, architect, contractor-their functions and interrelationship and jurisdiction.
	4th	Resources for construction management-men, machines, materials, money
		Contructional Planning
2nd WEEK	1st	Importance of Construction Planning
	2ND	Developing work breakdown structure for construction work
	3RD	Construction Planning stages-Pre-tender stage, Post-tender stage.
	4TH	Construction scheduling by Bar charts-preparation of Bar Charts for simple construction works.
3RD WEEK	1st	Preparation of schedules for labour materials, machinery, finance for small works
	2ND	Limitation of Bar charts
	3RD	Construction scheduling by network techniques-defination of terms, PERT and CPM techniques, advantages and disadvantages of two techniques
	4TH	Network analysis, estimation of time and critical path, application of PERT and CPM techniques in sample construction works.
		Materials and Stores Management
4TH WEEK	1st	Classification of Stores-storage of stock
	2ND	Issue of materials-indent, invoice, bin card
		Construction Site Management
	3RD	Job Lay out-Objectives, Review plans, specifications, Lay out of equipments.
	4TH	Location of equipment, organizing labour at site
5TH WEEK	1st	Job lay out for different construction sites
	2ND	Principle of storing material at site
		Construction Organization
	3RD	Introduction-Characteristics, Structure, importance
	4TH	Organization types-line and staff, functions and their characteristics
6TH WEEK	1st	Principles of organization- meaning and significance of terms- control, authority, responsibility, job & task
	2ND	Leadership-necessity, styles of leadership, role of leader
	3RD	Human relations-relations with subordinates, peers, Supervisors, characteristics of group behavior
	4TH	mob psychology, handling of grievances, absenteeism, labour welfare
7TH WEEK	1st	Conflicts in organization-genesis of conflicts, types-intrapersonal, interpersonal, intergroup, resolving conflicts.
		Construction Labour and Labour Management
	2ND	Preparing Labour schedule
	3RD	Essential steps for optimum labour output

	4TH	Labour characteristics
8TH WEEK	1st	Wages & their payment
	2ND	Labour incentives
	3RD	Motivation- Classification of motives, different approaches to motivation
		Equipment Management
	4TH	Preparing the equipment schedule
9TH WEEK	1st	Identification of different alternative equipment
	2ND	Importance of Owning & operating costs in making decisions for hiring & purchase of equipment
	3RD	Inspection and testing of equipment
	4TH	Equipment maintenance
		Quality Control
10TH WEEK	1st	Concept of quality in construction
	2ND	Quality Standards- during construction, after construction, destructive & non destructive methods
		Monitoring Progress
	3RD	Programme and progress of work
	4TH	Work study
11TH WEEK	1st	Analysis and control of physical and financial progress corrective measures
		Safety Management in Construction
	2ND	Importance of safety
	3RD	causes and effects of accidents in construction works
	4TH	Safety measures in worksites for excavation, scaffolding, formwork, fabrication and erection, demolition
12TH WEEK	1st	Development of safety consciousness
	2ND	Safety legislation-Workman's compensation act, contract labour act
		Role of Vulnerability Atlas of India in Construction Projects
	3RD	Introduction to Vulnerability Atlas of India, Concepts of natural hazards and disasters and vulnerability profile of India. Definition of disaster related terms
	4TH	Earthquake hazard and vulnerability, Magnitude and intensity scales of earthquake, seismic zones, earthquake hazard maps,
13TH WEEK	1st	Types of structures and damage classification, effects in housing and resistant measures
	2ND	Wind/Cyclone hazard and vulnerability, wind speed and pressures
	3RD	Flood hazard and vulnerability, Flood hazard and Flood prone areas of the country, General protection of habitants and flood resistant construction
	4TH	Landslides, Tsunamis and Thunderstorm hazards and vulnerability,
14th WEEK	1st	Landslide & Thunderstorm incidence maps, Measures against Tsunami hazards
	2ND	Housing vulnerability risk tables and usage of vulnerability atlas of India, Inclusion of vulnerability atlas in Tender documents.
	3RD	REVISION
	4TH	Question answer sesion
15th WEEK	1st	Previous years question discussion & Neumerical problem solve
	2ND	Previous years question discussion
	3RD	Question answer sesion
	4TH	Previous years question discussion & Neumerical problem solve

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DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY
CIVIL ENGINEERING	6TH	Mrs.PRANATI PANDA , GF(CIVIL)
SUB - CONSTRUCTION WORKSHOP PRACTICE & MS PROJECT(PR1)		NO.OF DAYS PER WEEK CLASS ALLOTED :- 02
NO.OF WEEKS :- 15		COMMENCEMENT DATE DEC - 22, 2025 (SUMMER)
WEEKS	CLASS DAYS	THEORY TOPICS
1ST WEEK	1st	Study of tools required for construction of masonry.
	2ND	Layout Plan of a building.
2nd WEEK	1st	Construction of 1 &1½% Brick thick walls in English Bond in Mud mortar including a corner
	2ND	Construction of 1 & 1½% Brick thick Pillar in Mud mortar.
3RD WEEK	1st	Bar bending of reinforcements for a beam.
	2ND	Bar bending of reinforcements for a slab.
4TH WEEK	1st	Bar bending of reinforcements for a lintel with chajja.
	2ND	Bar bending of reinforcements for a column.
5TH WEEK	1st	Fabrication of reinforcements for a beam.
	2ND	Fabrication of reinforcements for a slab.
6TH WEEK	1st	Rinforcements for a lintel with chajja.
	2ND	Rinforcements for a column.
7TH WEEK	1st	Conducting a Non destructive compressive strength test on concrete beam using rebound Hammer as per IS:1311(Part-2)-1992
	2ND	Study of pipe joints and pumbing fixtures.
8TH WEEK	1st	Field visits: Visit to a construction site of a building where the following works are in progress. a) Excavation of foundation, b) Masonry works, c) Plumling works
	2ND	Field visits: Visit to a construction site of a building where the following works are in progress. a) Painting (interior/exterior) b) Wood works c) Fabricat:& concreting works d)Flooring
9TH WEEK	1st	Introduction to Microsoft Project 1.Project Management-Definition & concept
	2ND	MS project scheduling for engineering
10TH WEEK	1st	Creating a project plan - 1) Basic Information for a new protect
	2ND	1.Creating project from a blank 2.Creating project from existing
11TH WEEK	1st	Basics of Microsoft Project 1.Estimating a project
	2ND	Project Task
12TH WEEK	1st	Projec Resources
	2ND	Tracking the project progress
13TH WEEK	1st	Tracking the project progress
	2ND	Tracking the project progress
14th WEEK	1st	Project Reporting
	2ND	Project Reporting
15th WEEK	1st	Custon views and field
	2ND	Custon views and field

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DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY
CIVIL ENGINEERING	6TH	Mrs.PRANATI PANDA , GF(CIVIL)
SUB - ADVANCED CONSTRUCTION TECHNIQUES & EQUIPMENT(TH3)		NO.OF DAYS PER WEEK CLASS ALLOTED :- 04
NO.OF WEEKS :- 15		COMMENCEMENT DATE DEC - 22, 2025 (SUMMER)
WEEKS	CLASS DAYS	THEORY TOPICS
		Advanced Construction Materials
1ST WEEK	1st	Fibers and Plastics- Types of fibers- Steel,Carbon, glass fibers, Use of fibers as construction material, properties of fibers.
	2ND	Types of plastics-PVC,RPVC,HDPE,FRP,GRP etc. Colored plastic sheets. Use of plastic as construction material.
	3RD	Artificial Timbers - Properties and uses of artificial timber.
	4TH	Types of artificial timber available in market, strength of artificial timber
2nd WEEK	1st	Miscellaneous materials - Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc
		Prefabrication
	2ND	Introduction, necessity and scope of prefabrication of buildings, history of prefabrication, current uses of prefabrication
	3RD	Types of prefabricated systems, classification of prefabrication, advantages and disadvantages of prefabrication
	4TH	The theory and process of prefabrication, design principle of prefabricated systems
3RD WEEK	1st	Types of prefabricated elements, modular coordination
	2ND	Indian standard recommendation for modular planning
		Earthquake Resistant Construction
	3RD	Building Configuration
	4TH	Lateral Load resisting structures
4TH WEEK	1st	Building characteristics
	2ND	Effect of structural irregularities- vertical irregularities
	3RD	Effect of structural irregularities- vertical irregularities
	4TH	vertical irregularities, Plan configuration problems
5TH WEEK	1st	vertical irregularities, Plan configuration problems
	2ND	Safety consideration during additional construction and alteration of existing Buildings
	3RD	Safety consideration during additional construction and alteration of existing Buildings
	4TH	Additional strengthening measures in masonry building- corner reinforcement
6TH WEEK	1st	Lintel band, sill band, plinth band, roof band, gable band etc.
		Retrofitting of Structures
	2ND	Seismic retrofitting of reinforced concrete buildings:

	3RD	Sources of weakness in RC frame building
	4TH	Sources of weakness in RC frame building
7TH WEEK	1st	Classification of retrofitting techniques and their uses
	2ND	Classification of retrofitting techniques and their uses
		Building Services
	3RD	Cold water Distribution in high rise building, lay out of installation
	4TH	Cold water Distribution in high rise building, lay out of installation
8TH WEEK	1st	Hot water supply - General principles for central plants- layout
	2ND	Hot water supply - General principles for central plants- layout
	3RD	Electrical services- i) requirements in high rise buildings ii) Layout of wiring - types of wiring
	4TH	iii) Fuses and their types iv) Earthing and their uses
9TH WEEK	1st	Lighting- Requirement of lighting , Measurement of light intensity
	2ND	Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation)
	3RD	Problems on ventilation
	4TH	Lighting- Requirement of lighting , Measurement of light intensity
10TH WEEK	1st	Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation)
	2ND	Problems on ventilation
	3RD	Mechanical Services - Lifts, Escalator, Elevators- types and uses
	4TH	Mechanical Services - Lifts, Escalator, Elevators- types and uses
		Construction and Earth Moving Equipments
11TH WEEK	1st	Planning and selection of construction equipments
	2ND	Planning and selection of construction equipments
	3RD	Study on earth moving equipments like drag line, tractor, bulldozer, power shovel
	4TH	Study on earth moving equipments like drag line, tractor, bulldozer, power shovel
12TH WEEK	1st	Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers,
	2ND	Study and uses of compacting equipments likePneumatic tired rollers and vibrating compactors
	3RD	Owning and operating cost - Problems
	4TH	Owning and operating cost - Problems
		Soil Reinforcing Techniques
13TH WEEK	1st	Necessity of soil reinforcing
	2ND	Necessity of soil reinforcing
	3RD	Use wire mesh and geo-synthetics
	4TH	Use wire mesh and geo-synthetics

14th WEEK	1st	Strengthening of embankments, Slope stabilization in cutting and embankmen techniques
	2ND	Strengthening of embankments, Slope stabilization in cutting and embankmen techniques
	3RD	Quiz test
	4TH	Quiz test
15th WEEK	1st	REVISION
	2ND	Question answer sesion
	3RD	Previous years question discussion & Neumerical problem solve
	4TH	Previous years question discussion

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DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY
CIVIL ENGINEERING	4TH	Mrs.PRANATI PANDA , GF(CIVIL)
SUB - Estimating, Costing & Valuation(TH3)		NO.OF DAYS PER WEEK CLASS ALLOTED :- 03
NO.OF WEEKS :- 15		COMMENCEMENT DATE DEC - 22, 2025 (SUMMER)
WEEKS	CLASS DAYS	THEORY TOPICS
		Fundamentals of Estimating and Costing
1ST WEEK	1st	Estimating and Costing - Meaning, Purpose, administrative approval, Technical Sanction
	2ND	Types of methods of estimates - Approximate and Detailed estimate
	3RD	Roles and responsibility of Engineers at different positions/levels, administrative set ups and heirarchy of engineering Dept. In State./ Central Govt./ PSUs
2nd WEEK	1st	Standard formats of Measurement sheet, Abstract sheet
	2ND	Modes of measurement and desired accuracy in measurements for different items of work as per IS:1200
	3RD	Rules for deduction in different category of work as per IS:1200
3RD WEEK	1st	Description / Specification of items of building work as per OPWD/ DSR/CPWD/Railways
		Detailed Estimate
	2ND	Detailed Estimate- Definition and Purpose, Data required for detailed estimate - Civil cost, GST, Contingencies, Supervision charges
	3RD	Procedure for preparation of detailed estimate
4TH WEEK	1st	Bar bending schedule for footing, column
	2ND	Bar bending schedule for beam,Lintel
	3RD	Bar bending schedule for Chajja and slab elements
5TH WEEK	1st	Provisions in detailed estimate: Contingencies, work charged establishment, percentage charges, water supply and sanitary Charges and electrification charges etc.
	2ND	Prime cost, Provisional sum, Provisional quantities, Bill of quantities, spot items or site items
	3RD	Long wall and Short wall method, Centre line method
6TH WEEK	1st	Detailed estimate of Single and Double Room building using long wall and short wall method
	2ND	Detailed estimate of Single and Double Room building using centre linemethod
	3RD	Detailed estimate of residential building using long wall and short wall method
7TH WEEK	1st	Detailed estimate of residential building using long wall and short wall method
	2ND	Detailed estimate of residential building using long wall and short wall method
	3RD	Detailed estimate of residential building using centre line method

8TH WEEK	1st	Detailed estimate of residential building using centre line method
		Estimate for Civil Engineering Works
	2ND	Earthwork - Quantities for roads, Embankment and canal by - Mid sectional area method, mean sectional area method, Prismoidal and trapezoidal formula method
	3RD	Detailed estimate for septic tank
9TH WEEK	1st	Detailed estimate for septic tank
	2ND	Estimate of RCC Culvert
	3RD	Estimate of RCC Culvert
10TH WEEK	1st	Estimate of drainage syphon
	2ND	Estimate of drainage syphon
	3RD	Estimate of drainage syphon
11TH WEEK	1st	Estimate of vertical fall
	2ND	Estimate of vertical fall
	3RD	Estimate of Bituminous Road
12TH WEEK	1st	Estimate of Bituminous Road
		Rate Analysis
	2ND	Rate analysis : Definition , Purpose and importance
	3RD	Lead, lift, overhead charges, water charges and contractors' profit, procedure for rate analysis
13TH WEEK	1st	Task work- Definition, types, Task work of different skilled labour for different items.
	2ND	Categories of labours, their daily wages, types and number of labours for different items of work.
	3RD	Transportation charges of materials - Lead and Lift, Hire charges of machineries and equipment.
14th WEEK	1st	Preparing rate analysis of PCC for buildings and roads
	2ND	Preparing rate analysis of Plastering for buildings
	3RD	Preparing rate analysis of Flooring for buildings
15th WEEK	1st	Preparing rate analysis of Brick work for buildings
	2ND	REVISION
	3RD	Previous years question discussion

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DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY
CIVIL ENGINEERING	4TH	Mrs.PRANATI PANDA , GF(CIVIL)
SUB - Estimation Costing & Valuation Lab		NO.OF DAYS PER WEEK CLASS ALLOTED :- 02
NO.OF WEEKS :- 15		COMMENCEMENT DATE DEC - 22, 2025 (SUMMER)
WEEKS	CLASS DAYS	THEORY TOPICS
1ST WEEK	1st	Prepare the list of items to be executed with units for detailed estimate of a given structure from the given drawing
	2ND	Record checking and taking Viva
2nd WEEK	1st	Prepare a report on market rates for given material, labour wages, hire charges of tools & equipments required to construct the given structure
	2ND	Record checking and taking Viva
3RD WEEK	1st	Study of items with specification given in the DSR(Any 10 items)
	2ND	Record checking and taking Viva
4TH WEEK	1st	Recording in Measurement Book (Any 4 items)
	2ND	Record checking and taking Viva
5TH WEEK	1st	Prepare bill of quantities of given item from actual measurements.(Any 4 items)
	2ND	Record checking and taking Viva
6TH WEEK	1st	Prepare approximate estimate for the given civil engineering works
	2ND	Record checking and taking Viva
7TH WEEK	1st	Calculate the reinforcement quantities from the given set of drawings for a room size of 3m X 4m with bar bending schedule for footing, column
	2ND	Calculate the reinforcement quantities from the given set of drawings for a room size of 3m X 4m with bar bending schedule for beam, lintel with chajjah
8TH WEEK	1st	Calculate the reinforcement quantities from the given set of drawings for a room size of 3m X 4m with bar bending schedule for slab
	2ND	Record checking and taking Viva
9TH WEEK	1st	Prepare rate analysis for the given five item of works
	2ND	Prepare rate analysis for the given five item of works
10TH WEEK	1st	Prepare rate analysis for the given five item of works
	2ND	Record checking and taking Viva
11TH WEEK	1st	Prepare detailed estimate of small Septic tank from the given set of drawings
	2ND	Prepare detailed estimate of small Septic tank from the given set of drawings
12TH WEEK	1st	Prepare detailed estimate of small Septic tank from the given set of drawings
	2ND	Record checking and taking Viva
13TH WEEK	1st	Prepare detailed estimate of a Bituminous Road

2ND	Prepare detailed estimate of a Rigid and Flexible Pavement
1st	Record checking and taking Viva
2ND	Prepare detailed estimate of a Residential Building
1st	Prepare detailed estimate of a Residential Building
2ND	Record checking and taking Viva

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