

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

Discipline: Civil Engg	Semester: 3rd	Name of the Teaching faculty: Annapurna Mallick	Status
Subject: Building materials and construction technology Th-3	No of Days/Week class allotted: 5days	Semester from Date: 01/08/23 To Date: No of weeks:	
Week	Class Day	Topics	
1st	1st	Classification of rock.	
	2nd	Uses of stone, natural bed of stone	
	3rd	Qualities of good building stone	
	4th	Dressing of stone	
	5th	Characteristics of different types of stone and their uses	
2nd	1st	Brick earth-its composition	
	2nd	Brick making- preparation of brick earth	
	3rd	Moulding, Drying	
	4th	Burning in kilns (Continuous process)	
	5th	Classification of bricks, size of traditional and modular bricks.	
3rd	1st	Qualities of good building bricks	
	2nd	Cement types of cement, properties manufacturing plete cements, of cement	
	3rd	Importance and application of blended cement with fly ash and blast furnace slag	
	4th	Mortar : Definition and types of mortar	
	5th	Sources and classification of sand, bulking of sand.	
4th	1st	Use of gravel, morrum and fly ash as different building material.	
	2nd	Concrete: Definition and composition –Water cement ratio-workability, Mechanical properties.	
	3rd	Grading of aggregates, mixing, placing, compacting and curing of concrete	
	4th	Timber classification and structure of timber	
	5th	seasoning of timber- Importance	
5th	1st	Characteristics of good timber	
	2nd	Clay products and refractory materials- Definition and classification.	
	3rd	Properties and uses of refractory materials like-tiles, terracotta	
	4th	Porcelain glazing , Iron and steel uses of cast iron.	

6th	5th	Wrought iron, mild steel and tor steel	
	1st	Composition of paints, enamels	
	2nd	Composition of varnishes	
	3rd	Types and uses of surface protective materials like paints	
	4th	Enamels, Varnishes, Distempers	
7th	5th	Emulsion, French polish and Wax polish Tutorial class.	
	1st	Building and classification of buildings based on occupancy, different components of buildings site	
	2nd	investigation objective, Site reconnaissance and explorations	
	3rd	Concept of foundation and its purpose	
	4th	Types of foundation – shallow and deep, shallow foundation - constructional details of Spread foundation of walls.	
8th	5th	Thumb rules for depth and width of foundation and thickness of concrete block.	
	1st	Deep foundations : Pile foundation their suitability, classification of piles based on materials, function and method of installation	
	2nd	Purpose of walls, Classification of walls load bearing, non-load bearing walls, retaining walls	
	3rd	Classification of walls as per materials of construction : brick stone, reinforced brick , reinforced concrete, pre cast, hollow and solid concrete block and composite masonry walls	
	4th	Partition walls suitability and uses of brick and wooden partition walls, brick masonry, Definition of different terms	
9th	5th	Bond- meaning and necessity; English bond for I and I -1/2 brick thick walls	
	1st	Stone Masonry string course, corbel, Cornices block in course	
	2nd	Grouting, mouldings, templates, throating through stones, parapet, coping, pilaster and buttress	
	3rd	Grouting, mouldings, templates, throating through stones, parapet, coping, pilaster and buttress	
	4th	Glossary of terms used in doors and windows doors- different types of doors	
10th	5th	Glossary of terms used in doors and windows doors- different types of doors	
	1st	Doors- different types of doors	
	2nd	Doors- different types of doors	
	3rd	Windows – different types of windows	
11th	4th	Windows – different types of windows	
		Purpose of use of arches and lintels	
	1st	Purpose of use of arches and lintels	
	2nd	Floors, types of floor finishes-cast – situ, concrete flooring, terrazzo tile flooring cast in situ terrazzo flooring, timber flooring.	
	3rd	Floors, types of floor finishes-cast – situ, concrete flooring, terrazzo tile flooring cast in situ terrazzo flooring, timber	

		flooring.	
	4th	Roots types concept and function of flat pitched and slopped roofs	
	5th	Roots types concept and function of flat pitched and slopped roofs	
12th	1st	stair case, landing, winder, stringer, newel, baluster, rise, tread , width	
	2nd	stair case, landing, winder, stringer, newel, baluster, rise, tread , width	
	3rd	Hand rail, noising, head room, mumty room, various types of stair case – straight flight, dog legged open well	
	4th	Hand rail, noising, head room, mumty room, various types of stair case – straight flight, dog legged open well	
	5th	Quarter turn, half turn, bifurcated stair, spiral stair, cantilever stair, tread riser stair	
13th	1st	Plastering – purpose- types of plastering types of plaster finishes.	
	2nd	Plastering – purpose- types of plastering types of plaster finishes.	
	3rd	Proportions of mortar of plaster, pre parathion techniques and curing.	
	4th	Painting purpose types, painting	
	5th	Painting purpose types, painting	
14th	1st	White washing – colour washing- distemping internal and external walls	
	2nd	Damp and termite proofing – materials and method	
	3rd	Concept of green building, introduction to energy management and audit of building	
	4th	Aims of energy management of buildings	
	5th	Types of energy audit, response energy audit questionnaire	
15th	1st	Energy Surveying and audit report	
	2nd	Types of energy audit, response energy audit questionnaire	
	3rd	Energy Surveying and audit report	
	4th	PREVIOUS YEAR QUESTIONS	
	5th	PREVIOUS YEAR QUESTIONS	
16th	1st	CLASS TEST 3, PREVIOUS YEAR QUESTIONS, QUIZ	

Learning Resources:

Sl No.	Author Name	Name of the Book
1	N. Subramanian Building materials & Construction	N. Subramanian Building materials & Construction
2	Rangwala Engineering Materials	Rangwala Engineering Materials
3	Rangwala Building Construction	Rangwala Building Construction


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LESSON PLAN

Discipline: Civil Engg.	Semester: 3rd	Name of the Teaching faculty: <i>Monalin Barik</i>	Status
Subject: Estimation & costing-I Th-4	No of Days/Week class allotted:	Semester from Date: <i>01/08/23</i> To Date: No of weeks:	
Week	Class Day	Topics	
1st	1st	1.0 INTRODUCTION : 1.1 Types of estimates – Plinth area, floor area / carpetarea	
	2nd	1.2 Units and modes of measurements as per IS 1200 1.3 Accuracy of measurement for different item of work	
	3rd	2.0 QUANTITY ESTIMATE OF BUILDING 2.1 Short wall long wall method and centre line method	
	4th	Problems	
2nd	1st	deductions in masonry,	
	2nd	Problems	
	3rd	plastering,	
	4th	Problems	
3rd	1st	white washing,	
	2nd	Problems	
	3rd	painting etc., multiplying factor	
	4th	Problems	
4th	1st	painting etc.,	
	2nd	for painting of doors and windows (paneled/glazed), grills etc. as per OPWD scheduled of rates.	
	3rd	Problems	
	4th	Problems	
5th	1st	Problems	
	2nd	Problems	
	3rd	Detailed estimate of single storied flat roof building with shallow foundation and	
	4th	Problems	
6th	1st	Problems	
	2nd	RCC roof slab with leak proof treatment over it including	
	3rd	Problems	
	4th	Problems	
7th	1st	2.3 Detailed estimate of a simple inclined roof building with gabled /hipped roof	
	2nd	Problems	
	3rd	Problems	

	4th	and A.C. sheet / G.C.I. sheet roofing.	
8th	1st	Problems	
	2nd	Problems	
	3rd	Problems	
	4th	3.0 ANALYSIS OF RATES AS PER OPWD SPECIFICATIONS / STANDARDS 3.1 Analysis of rates for cement concrete	
9th	1st	Problems	
	2nd	Problems	
	3rd	Problems	
	4th	brick masonry in Cement Mortar	
10th	1st	Problems	
	2nd	laterite stone masonry in Cement Mortar,	
	3rd	Problems	
	4th	Problems	
11th	1st	cement plaster	
	2nd	Problems	
	3rd	white washing ,Artificial Stone flooring,	
	4th	Problems	
12th	1st	concrete flooring,	
	2nd	Problems	
	3rd	R.C.C. with centering and shuttering, reinforcing steel,	
	4th	Problems	
13th	1st	Painting of doors and windows etc	
	2nd	Problems	
	3rd	3.2 Calculation of lead, lift, conveyance charges, royalty of materials, etc.as per Orissa P.W.D. system	
	4th	3.3 Abstract of cost of estimate.	
14th	1st	4.0 ADMINISTRATIVE SET-UP OF ENGINEERING ORGANISATIONS	
	2nd	4.1 Administrative set-up and hierarchy of Engineering Deptt. Duties of responsibilities of Engineers at different positions /levels	
	3rd	DOUBT CLEARING CLASSES	
	4th	PREVIOUS YEAR QUESTION DISCUSSION	
15th	1st	PREVIOUS YEAR QUESTION DISCUSSION	
	2nd	PREVIOUS YEAR QUESTION DISCUSSION	
	3rd	PREVIOUS YEAR QUESTION DISCUSSION	
	4th	PREVIOUS YEAR QUESTION DISCUSSION	
16th	1st	CLASS TEST 3, PREVIOUS YEAR QUESTIONS, QUIZ	

Learning Resources:

Sl No.	Author Name	Name of the Book
1	M.Chakraborty. Estimating	Estimating, Costing, specification & Valuation in Civil Engineering
2	B.N.Dutta Estimating & Costing	B.N.Dutta Estimating & Costing
3	Govt. of Odisha Latest Orissa PWD Schedule of Rates & Analysis of rates	Govt. of Odisha Latest Orissa PWD Schedule of Rates & Analysis of rates


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Discipline: Civil Engg	Semester: 3rd	Name of the Teaching faculty: . Annapurna Sethy	Status
Subject: Structural Mechanics Th-1	No of Days/Week class allotted: days	Semester from Date: 01/08/23 To Date: No of weeks:	
Week	Class Day	Topics	
1st	1st	Basic Principle of Mechanics	
	2nd	Force, Moment, support conditions, Conditions of equilibrium	
	3rd	C.G & MI, Free body diagram	
	4th	Review of CG and MI of different sections	
	5th	Review of CG and MI of different sections	
2nd	1st	Introduction to stresses and strains	
	2nd	Mechanical properties of materials – Rigidity, Elasticity, Plasticity, Compressibility, Hardness, Toughness, Stiffness, Brittleness,	
	3rd	Ductility, Malleability, Creep, Fatigue, Tenacity, Durability	
	4th	Types of stresses -Tensile, Compressive and Shear stresses	
	5th	Types of strains - Tensile, Compressive and Shear strains	
3rd	1st	Complimentary shear stress - Diagonal tensile / compressive Stresses due to shear	
	2nd	Elongation and Contraction, Longitudinal and Lateral strains	
	3rd	Poisson's Ratio, Volumetric strain, computation of stress, strain	
	4th	change in dimensions and volume etc.	
	5th	Numerical	
4th	1st	Hooke's law - Elastic Constants	
	2nd	Derivation of relationship between the elastic constants	
	3rd	Application of simple stress and strain in engineering field	
	4th	Behavior of ductile and brittle materials under direct loads, Stress Strain curve of a ductile material	
	5th	Limit of proportionality, Elastic limit, Yield stress, Ultimate stress, Breaking stress, Percentage elongation, Percentage reduction in area	
5th	1st	Significance of percentage elongation and reduction in area of cross section	
	2nd	Deformation of prismatic bars due to uniaxial load, Deformation of prismatic bars due to its self-weight.	
	3rd	Complex stress and strain	
	4th	Principal stresses and strains: Occurrence of normal and	

		tangential stresses
	5th	Concept of Principal stress and Principal Planes
6th	1st	major and minor principal stresses and their orientations
	2nd	Mohr's Circle and its application to solve problems of complex stresses
	3rd	Stresses in beams due to bending: Bending stress in beams – Theory of simple bending – Assumptions
	4th	Moment of resistance – Equation for Flexure– Flexural stress distribution
	5th	Curvature of beam – Position of N.A. and Centroidal Axis – Flexural rigidity – Significance of Section modulus
7th	1st	Shear stresses in beams: Shear stress distribution in beams of rectangular, circular and standard sections symmetrical about vertical axis.
	2nd	Shear stresses in beams: Shear stress distribution in beams of rectangular, circular and standard sections symmetrical about vertical axis.
	3rd	Concept of torsion, basic assumptions of pure torsion
	4th	torsion of solid and hollow circular sections, polar moment of inertia
	5th	torsional shearing stresses, angle of twist, torsional rigidity, equation of torsion
8th	1st	Combined bending and direct stresses: Combination of stresses, combined direct and bending stresses
	2nd	Maximum and Minimum stresses in Sections, Conditions for no tension, Limit of eccentricity
	3rd	Middle third/fourth rule, Core or Kern for square
	4th	rectangular and circular sections, chimneys, dams and retaining walls
	5th	Numerical
9th	1st	Columns and Struts, Definition, Short and Long columns
	2nd	End conditions, Equivalent length / Effective length, Slenderness ratio
	3rd	Axially loaded short and long column, Euler's theory of long columns
	4th	Critical load for Columns with different end conditions
	5th	Types of Loads: Concentrated (or) Point load, Uniformly Distributed load (UDL)
10th	1st	Types of Supports: Simple support, Roller support, Hinged support, Fixed support
	2nd	Types of Reactions: Vertical reaction, Horizontal reaction, Moment reaction
	3rd	Types of Beams based on support conditions
	4th	Calculation of support reactions using equations of static equilibrium
		Shear Force and Bending Moment: Signs Convention for S.F. and B.M


11th	1st	S.F and B.M of general cases of determinate beams with concentrated loads and udl only
	2nd	S.F and B.M diagrams for Cantilevers
	3rd	Simply supported beams and over hanging beams
	4th	Position of maximum BM, Point of contra flexure
	5th	Relation between intensity of load, S.F and B.M.
12th	1st	Numerical
	2nd	Introduction: Shape and nature of elastic curve (deflection curve)
	3rd	Introduction: Shape and nature of elastic curve (deflection curve)
	4th	Relationship between slope, deflection and curvature (No derivation)
	5th	Relationship between slope, deflection and curvature (No derivation)
13th	1st	Importance of slope and deflection
	2nd	Slope and deflection of cantilever and simply supported beams under concentrated and uniformly distributed load (by Double Integration method, Macaulay's method)
	3rd	Slope and deflection of cantilever and simply supported beams under concentrated and uniformly distributed load (by Double Integration method, Macaulay's method)
	4th	Slope and deflection of cantilever and simply supported beams under concentrated and uniformly distributed load (by Double Integration method, Macaulay's method)
	5th	Slope and deflection of cantilever and simply supported beams under concentrated and uniformly distributed load (by Double Integration method, Macaulay's method)
14th	1st	Indeterminacy in beams
	2nd	Principle of consistent deformation/compatibility
	3rd	Analysis of propped cantilever
	4th	Analysis of propped cantilever
	5th	Analysis of propped cantilever
15th	1st	fixed and two span continuous beams by principle of superposition
	2nd	SF and BM diagrams (point load and udl covering full span)
	3rd	SF and BM diagrams (point load and udl covering full span)
	4th	SF and BM diagrams (point load and udl covering full span)
	5th	SF and BM diagrams (point load and udl covering full span)
16th	1st	Introduction: Types of trusses
	2nd	statically determinate and indeterminate trusses
	3rd	statically determinate and indeterminate trusses
	4th	degree of indeterminacy
	5th	stable and unstable trusses
17th	1st	advantages of trusses.
	2nd	Analysis of trusses: Analytical method (Method of joints, method of Section)

3rd	Analysis of trusses: Analytical method (Method of joints, method of Section)
4th	Analysis of trusses: Analytical method (Method of joints, method of Section)
5th	Analysis of trusses: Analytical method (Method of joints, method of Section)
	CLASS TEST 3, PREVIOUS YEAR QUESTIONS, QUIZ

Learning Resources:

Sl No.	Author Name	Name of the Book
1	R. Subramanian Strength of Materials	R. Subramanian Strength of Materials
2	S. Ramkrishnam	Theory of structure
3	V.N. Vazirani & M.M. Rathwani	Analysis of Structures Vol. I &


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Discipline: Civil Engg.	Semester: 3rd	Name of the Teaching faculty: <i>Simen Pratihadanshini</i>	Status
Subject: Geotechnical Engineering Th-2	No of Days/Week class allotted:	Semester from Date: <i>01/09/23</i> To Date: No of weeks:	
Week	Class Day	Topics	
1st	1st	1.0 INTRODUCTION 1.1- Soil and Soil Engineering.1.2- Scope of Soil Mechanics	
	2nd	2.0 PRELIMINARY DEFINITIONS AND RELATIONSHIP.2.1- Soil as a three Phase system.	
	3rd	Weight volume relationships: Water Content ,Density	
	4th	Specific gravity, Voids ratio, Porosity,	
2nd	1st	degree of saturation ,Percentage of air voids, air content,	
	2nd	density Index, Bulk/Saturated/dry/submerged density.	
	3rd	3.0 DETERMINATION OF INDEX PROPERTIES. 3.1- Water Content (Pycnometer method, Oven drying method)	
	4th	3.2- Specific Gravity	
3rd	1st	3.3- Particle size distribution, Sieve analysis, Wetmechanical analysis- Pipette method, Basic concept of Hydrometer Analysis	
	2nd	3.4 – Consistency of Soils, Atterberg’s Limits, Plasticity Index, Consistency Index, Liquidity Index	
	3rd	4.0 CLASSIFICATION OF SOIL. 4.1- General.	
	4th	4.2- Particle size Distribution.	
4th	1st	-Textural Classification.	
	2nd	-HRB Classification.	
	3rd	-Unified Soil Classifications	
	4th	I.S. Classification.	
5th	1st	5.0 PERMEABILITY AND SEEPAGE 5.1- Concept of Permeability, Darcy’s Law	
	2nd	Co-efficient of Permeability,	
	3rd	5.2 Factors affecting Permeability	
	4th	5.3- Constant head permeability and	
6 th	1st	falling head permeability Test	
	2nd	5.4- Seepage pressure, the phenomenon of quick sand	

	3rd	5.5- Concept of flow-net, Properties and application of flow-net.	
	4th	6.0- COMPACTION AND CONSOLIDATION.	
7th	1st	6.1- Compaction, Light and heavy compaction Test Optimum Moisture Content of Soil, Maximum dry density, Zero air void line	
	2nd	Factors affecting Compaction	
	3rd	Field compaction methods and their suitability	
	4th	Consolidation, distinction between compaction and consolidation	
8th	1st	Spring Analogy method, Pressure-void ratio curve, normally consolidated	
	2nd	under consolidated and over consolidated soil, Assumption of Terzaghi's theory of one-dimensional consolidation, Laboratory Consolidation Test	
	3rd	Co-efficient of Consolidation, Time Factor, Estimation of consolidation settlement, Difference between primary and secondary consolidation	
	4th	7.0 SHEAR STRENGTH.	
9th	1st	7.1- Concept of shear strength	
	2nd	Mohr- Coulomb failure theory,	
	3rd	Cohesion, Angle of internal friction	
	4th	strength envelope for different type of soil, Measurement of shear strength;- Direct shear test,	
10th	1st	triaxial shear test, unconfined compression test and vane-shear test	
	2nd	8.0 EARTH PRESSURE ON RETAINING STRUCTURES	
	3rd	8.1 Active earth pressure	
	4th	Passive earth pressure, Earth pressure at rest.	
11th	1st	8.2- Use of Rankine's formula for the following cases (cohesion-less soil only)	
	2nd	(i) Backfill with no surcharge,	
	3rd	(ii) backfill with uniform surcharge.	
	4th	(iii) submerged backfill	
12th	1st	9.0 FOUNDATION ENGINEERING. 9.1- Functions of foundations,	
	2nd	shallow and deep foundation,	
	3rd	different type of shallow and deep foundations with sketches.	
	4th		
13th	1st	Types of failure (General shear, Local shear & punching shear)	
	2nd	9.2 Bearing capacity of soil, bearing capacity of soils using Terzaghi's formulae & IS Code formulae for strip, Circular and square footings	
	3rd	9.3 Machine Foundation: Introduction to Soil dynamics, Terms associated with soil dynamics	
	4th	Free vibration and Forced vibration, Natural frequency, Types of	

14th	1st	Free vibration and Forced vibration, Natural frequency, Types of	
	2nd	machines and machine foundation, General requirements, Design of machine	
	3rd	machines and machine foundation, General requirements, Design of machine	
	4th	foundations: Reciprocating type , Centrifugal type, Impact type,	
15th	1st	Isolation of foundations.	
	2nd	foundations: Reciprocating type , Centrifugal type, Impact type,	
	3rd	Isolation of foundations.	
	4th	PREVIOUS YEAR QUESTION DISCUSSION	
16th	1st	REVISION	

Learning Resources:

Sl No.	Author Name	Name of the Book
1	Dr. B.C.Punmia Soil Mechanics & Foundation Engineering	Dr. B.C.Punmia Soil Mechanics & Foundation Engineering
2	Dr. K.R.Arora Soil Mechanics & Foundation Engineering	Dr. K.R.Arora Soil Mechanics & Foundation Engineering
3	Dr. V.N.S. Murthy	Soil Mechanics & Foundation Engineering, Vol

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2021-22

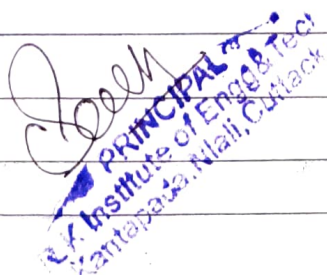
Discipline	Semester	Name of the teaching faculty:-
Subject: Geotech	No. Of days / per week class allotted:-	Semester ^{3rd} from date: 01/10/2021 To Date: 18/01/2022 No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
CH-1 FIRST	1st 1.10.21	Introduction
	2nd 4.10.21	Soil and Soil Engineering
	3rd 5.10.21	scope of soil mechanics .
	4th 7.10.21	origin
	5th 8.10.21	formation of soil
CH-2 SECOND	1st 19.10.21	Doubt clearing class
	2nd 21.10.21	Soils a three phase system
	3rd 22.10.21	water content, density, specific gravity.
	4th 25.10.21	voids ratio, porosity, Percentage of ^{air} void
	5th 26.10.21	air content, degree of saturation, density index
CH-3 THIRD	1st 28.10.21	Bulk, saturated / dry / submerged density,
	2nd 29.10.21	Interrelationship of various soil parameters
	3rd 1.11.21	Doubt clearing class
	4th 2.11.21	Class test
	5th 5.11.21	water content
ORTH	1st 8.11.21	specific gravity
	2nd 9.11.21	particle size Distribution
	3rd 11.11.21	Sieve analysis, wet mechanical analysis
	4th 12.11.21	particle size distribution curve and test.
	5th 15.11.21	consistency of soils .

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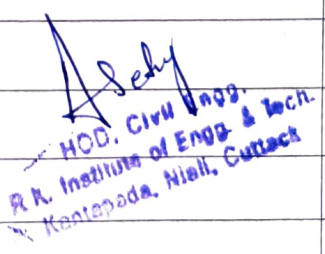
Discipline	Semester	Name of the teaching faculty:-
Subject.	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
FIRST CH4	1st 16.11.21	Atterberg's Limits, Plasticity Index, consistency index, Liquidity Index.
	2nd 18.11.21	Doubt clearing class
	3rd 22.11.21	Class test
	4th 23.11.21	Classification of Soil
	5th 25.11.21	IS classification, Plasticity chart
SECOND CH5	1st 26.11.21	concept of Permeability.
	2nd 29.11.21	Darcy's Law
	3rd 30.11.21	co-efficient of permeability
	4th 2.12.21	factors affecting permeability
	5th 3.12.21	constant head permeability and falling head permeability test.
THIRD CH6	1st 6.12.21	Seepage Pressure, effective stress, Phenomenon of quicksand
	2nd 7.12.21	Doubt clearing class
	3rd 9.12.21	compaction - Light and heavy compaction test optimum moisture content of soil.
	4th 10.12.21	Maximum dry density, zero air void line, factors affecting compaction, field compaction method and tests.
	5th 13.12.21	consolidation, distinction bet ⁿ compaction and consolidation.
FOURTH CH7	1st 14.12.21	Terzaghi's model analogy of compression/ Spring showing the process of consolidation.
	2nd 16.12.21	Doubt clearing class.
	3rd 17.12.21	concept of shear strength, Mohr-coulomb failure theory.
	4th 20.12.21	Cohesion, Angle of internal friction.
	5th 21.12.21	Strength envelope for different types of soil.

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Discipline	Semester	Name of the teaching faculty:-
Subject.	No. Of days / per week class allotted:-	Semester 3 rd from date: 01/10/21 To Date: 12/01/22 No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
FIRST CIT 8	1st 22.12.21	Measurement of shear strength - Direct Shear test, triaxial shear test
	2nd 24.12.21	unconfined compression test and vane-shear test.
	3rd 27.12.21	Doubt clearing class
	4th 28.12.21	Active earth pressure, Passive earth pressure earth pressure at rest.
	5th 30.12.21	use of Rankine's formula forth following case
SECOND CIT 9	1st 31.12.21	Backfill with no surcharge
	2nd 03.01.22	Backfill with uniform surcharge
	3rd 04.01.21	Doubt clearing class
	4th 06.01.21	function of foundation, shallow and deep foundation, different types of shallow deep foundation
	5th 07.01.21	Types of failure
THIRD	1st 11.01.21	Bearing capacity of soil & bearing capacity of soil using Terzaghi formula
	2nd 13.01.21	circle and square footing, effect water table on bearing capacity of soil
	3rd 17.01.21	Plate load test and standard penetration test
	4th 18.01.21	Revision
	5th	
FOURTH	1st	
	2nd	
	3rd	
	4th	
	5th	



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-: LESSON PLAN :- 2021-2022

Discipline	Semester	Name of the teaching faculty:-
Subject: Structural Mechanics (3m)	No. Of days / per week class allotted:-	Semester 3rd from date: 01/10/21 No. Of weeks:-
		To Date: 18/01/22
Week	Class day	Theory/ Practical Topics :
FIRST	1st 4.10.21	Basic Principle of Mechanics : Force, Moment Support conditions, Condition of equilibrium C.G & MI, Free body diagram Review of CG and MI of different sections Introduction to stress and Strain
	2nd 5.10.21	
	3rd 8.10.21	
	4th 9.10.21	
	5th 19.10.21	
SECOND	1st 22.10.21	Mechanical properties of materials - Types of stresses Types of Strain Complimentary shear stress. Diagonal tensile / compressive stress due to them
	2nd 23.10.21	
	3rd 25.10.21	
	4th 26.10.21	
	5th 27.10.21	
THIRD	1st 29.10.21	Elongation and contraction Longitudinal and lateral strain Poisson's Ratio Computation of stress, strain Volumetric strain
	2nd 30.10.21	
	3rd 1.11.21	
	4th 2.11.21	
	5th 3.11.21	
FOURTH	1st 5.11.21	Change in dimensions and volume etc. Hooke's Law Elastic constant Derivation of relationship bet ⁿ the elastic constant Behaviour of ductile and brittle materials
	2nd 6.11.21	
	3rd 8.11.21	
	4th 9.11.21	
	5th 10.11.21	

-: LESSON PLAN :-

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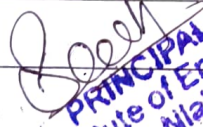
Discipline	Semester	Name of the teaching faculty:-
Subject.	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
FIRST CH-2 (C)	1st 12.11.21	Stress Strain Curve of a ductile materials
	2nd 13.11.21	Limit of Proportionality, Elastic Limit.
	3rd 15.11.21	Deformation of Prismatic bar due to uniaxial force
	4th 16.11.21	Deformation of Prismatic bar due to self weight
	5th 17.11.21	Principal Stresses and Strains.
SECOND CH-3	1st 20.11.21	Occurrence of normal and tangential stress
	2nd 22.11.21	Mohr's Circle and its application to solve problem
	3rd 23.11.21	Stresses in beams due to bending :- Bending stress in beams
	4th 24.11.21	Theory of simple bending - Assumptions
	5th 26.11.21	Moment of resistance - Equation for flexural
THIRD	1st 27.11.21	Flexural rigidity - Significance of section modulus
	2nd 29.11.21	Shear Stresses in beam
	3rd 30.11.21	Stresses in shafts due to torsion - Concept
	4th 1.12.21	basic assumptions of pure torsion.
	5th 3.12.21	Shearing stresses.
RTH CH-4	1st 4.12.21	Combined bending and direct stresses:
	2nd 6.12.21	maximum and minimum stress in section
	3rd 7.12.21	rectangular and circular sections
	4th 8.12.21	Columns and Struts - Definition
	5th 10.12.21	Short and Long Columns

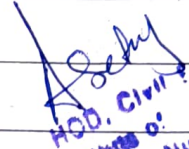
-: LESSON PLAN :-

Discipline	Semester	Name of the teaching faculty:-
Subject.	No. Of days / per week class allotted:-	Semester 3 rd from date: 01/10/21 No. Of weeks:- To Date: 18/01/22
Week	Class day	Theory/ Practical Topics :
FIRST <u>CH-5</u>	1st 11.12.21	Euler's theory of long columns
	2nd 13.12.21	Critical load for columns with different end/ends
	3rd 14.12.21	Shear force and bending moment.
	4th 15.12.21	Types of loads: and beams
	5th 17.12.21	Types of beams: based on support conditions
SECOND <u>CH-6</u>	1st 18.12.21	Shear force and bending moment in beams.
	2nd 20.12.21	Simply supported beams and overhanging beams
	3rd 21.12.21	Relation between intensity of load, SF and BM
	4th 22.12.21	Slope and Deflection + Determination
	5th 24.12.21	Shape and nature of elastic curve
THIRD <u>CH-7</u>	1st 27.12.21	Relationship between slope, def ⁿ , curvature
	2nd 28.12.21	Importance of slope and deflections
	3rd 29.12.21	Slope and deflection of cantilever
	4th 31.12.21	Simply supported beams under concentrated
	5th 3.01.22	Uniformly distributed load
FOURTH <u>CH-8</u>	1st 4.01.22	Indeterminate Beams
	2nd 5.01.22	Analysis of propped cantilever
	3rd 7.01.22	Fixed and two span continuous beams
	4th 8.01.22	Pre SF and BM diagram
	5th 10.1.22	Point load and U/d covering full span

-: LESSON PLAN :-

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 CH-2	1st 11.01.22	Trussel Definition
	2nd 12.01.22	Types of Trussel,
	3rd 15.01.22	Statically determinate and Indeterminate Trussel
	4th 17.01.22	Degree of Indeterminacy
	5th 18.01.22	Stable and unstable Trussel, Advantages of Trussel
SECOND	1st	
	2nd	
	3rd	
	4th	
	5th	
HIRD	1st	
	2nd	
	3rd	
	4th	
	5th	
RTH	1st	
	2nd	
	3rd	
	4th	
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-:LESSON PLAN:-

Discipline	Semester	Name of the teaching faculty:-
Subject: BMC+	No. Of days / per week class allotted:-	Sapra Dash Semester ^{3rd} from date: 01/10/2021 To Date: 18/01/2022 No. Of weeks:- 07/10/2021
Week	Class day	Theory/ Practical Topics :
<u>CH-1</u> FIRST	1st 05/10/2021	<u>Stone</u> :- Classification of rock, uses of stone, nature
	2nd 06/10/2021	Quality of good building stone
	3rd 07/10/2021	Dressing of stone
	4th 08/10/2021	Characteristics of different types of stones and their uses.
	5th	
<u>CH-2</u> SECOND	1st 21/10/2021	<u>Brick Earth</u> :- Definition and composition of brick earth.
	2nd 22/10/2021	Brick making:- Preparation of brick earth Moulding, drying, Burning in kilns.
	3rd 26/10/2021	Classification of Bricks; size of traditional and Modular bricks, Quality of good building brick
	4th 27/10/2021	Cement, mortar Concrete:- Types of cements, Properties of cements, Manufacturing of cement
	5th 28/10/2021	
THIRD	1st 28/10/2021	Importance and application of blended cement with fly ash and blast furnace slag.
	2nd 29/10/2021	<u>Mortar</u> :- Definition and types of mortar.
	3rd 02/11/2021	Sources and classification of sand, Bulking of sand.
	4th 03/11/2021	Use of gravel, Mortar and fly ash added brick masonry.
	5th	
<u>CH-4</u> FOURTH	1st 04/11/2021	<u>Concrete</u> : Definition and composition - water cement ratio - workability, mechanical properties and grade of aggregates, mixing, placing, compaction and curing
	2nd 09/11/2021	Other construction materials:- Timber classification and structure of timber.
	3rd 10/11/2021	Seasoning of timber - Importance,
	4th 11/11/2021	Characteristics of good timber.
	5th	

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 <u>Ch-5</u>	1st 12/11/2021	Clay Products and refractory materials:- tiles Menacotta, Porcelain glazing
	2nd 16/11/2021	Iron and steel:- uses of Cast iron, wrought iron, mild steel and tor steel.
	3rd 17/11/2021	Surface Protective Materials:- Composition of paints, enamels, varnishes.
	4th 18/11/2021	Types and uses of Surface Protective Material like paints, enamel varnishes Distemper, Emulsion French polish and wax polish.
	5th	
SECOND <u>CH-1</u> <u>CH-2</u>	1st 23/11/2021	<u>PART-B (CONSTRUCTION TECHNOLOGY)</u> Introduction:- Building and classification of buildings based on occupancy.
	2nd 24/11/2021	Different components of a building
	3rd 25/11/2021	Site investigation:- objective, site reconnaissance and explorations.
	4th 26/11/2021	Foundations:- Concept of Foundation and its Purpose.
	5th	
THIRD <u>CH-3</u>	1st 30/11/2021	Types of Foundation:- Shallow and deep
	2nd 01/12/2021	Shallow foundation - Constructional details of spread foundation for walls, thumb rules for depth, width of foundation and thickness of concrete block.
	3rd 02/12/2021	Deep foundation:- Pile foundations - their suitability, classification of piles based on mechanical functions, method of installation.
	4th 03/12/2021	Walls & Masonry Works:- Purpose of walls, Classification of walls - load bearing, non bearing, and load bearing wall retaining wall.
	5th	
FOURTH	1st 07/12/2021	Classification of walls:- load bearing, non-load bearing walls, retaining walls, brick to row, reinforced brick masonry.
	2nd 08/12/2021	partition walls:- suitability and use of brick and wooden partition walls.
	3rd 09/12/2021	Brick Masonry:- definition of different terms
	4th 10/12/2021	Bond - Meaning and necessity - English bond for 1/2 brick, Flemish bond for 1/2 brick and running bond for 1/2 brick.
	5th	

-: LESSON PLAN :-

Discipline	Semester	Name of the teaching faculty:-
Subject.	No. Of days / per week class allotted:-	Semester 8 th from date: 01/10/21 To Date: 18/01/22 No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
FIRST	1st 14/12/2021	Stone Masonry:-
	2nd 15/12/2021	Glossary of terms:- String course, Corbel, cornice block - in course, moulding, templates, through stones, parapet coping, pilaster and buttresses.
	3rd 16/12/2021	Doors, windows and lintels:- Glossary of terms used in doors and windows.
	4th 21/12/2021	Doors:- Different types of doors.
	5th	
SECOND	1st 22/12/2021	Window - Different types of windows. purpose of use of arches and lintels.
	2nd 23/12/2021	Floors, Roofs and Stairs:- Glossary of terms, Types of floor finishes:- Cast in situ, concrete floor.
	3rd 24/12/2021	Roof:- Glossary of terms, types of roof, Types of roofs, concept and function of flat, pitched, hipped and round.
	4th 26/12/2021	Stairs:- Glossary of terms, types of roof, Concept window lintels, stairways, balustrade, risk escape.
	5th	
THIRD	1st 29/12/2021	Monkeys types of Mosaic:- straight flight, dog legged, open well, quarter turn, half turn, spiral stair.
	2nd 30/12/2021	protective, decorative finishes, Damp and termite - Plastering - purpose - Types of plastering, types of plaster, finishes:- Gypsum finish, rough cast, loamish cast and faced.
	3rd 31/12/2021	Preparation of monomers used for different, Plastering, preparation of monomers techniques of plastering and
	4th 04/01/2022	pointing:- purpose - Types of pointing.
	5th	
FORTH	1st 05/01/2022	painting - objectives - methods of painting new and old wall surfaces, wood surfaces and metal surfaces:- powder coating and epoxy painting on metal.
	2nd 06/01/2022	White washing, Colour washing - Distempering - internal and external wall.
	3rd 07/01/2022	Damp and termite proofing - materials, and Method.
	4th 11/01/2022	Green building, energy management
	5th	

-:LESSON PLAN:-

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 12/01/2022	Green buildings, Energy Management and Energy Audit of building & project.
	2nd 13/01/2022	Introduction of Green building
	3rd 17/01/2022	Concept of Green building.
	4th 18/01/2022	Introduction of energy management and energy
	5th	
SECOND	1st 19/01/2022	Aims of energy management of building
	2nd 20/01/2022	Types of energy Audit, Renewable energy audit.
	3rd 21/01/2022	Energy Surveying and Audit report.
	4th	
	5th	
THIRD	1st	
	2nd	
	3rd	
	4th	
	5th	
FOURTH	1st	
	2nd	
	3rd	
	4th	
	5th	

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-: LESSON PLAN :- 20-21 - 2022

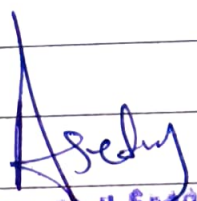
Discipline	Semester	Name of the teaching faculty:-
Subject: <u>Estimating - I</u>	No. Of days / per week class allotted:-	Semester 3 rd from date: 01/10/2021 To Date: 18/01/2022 No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
FIRST <u>CH-1</u>	1st 01.10.21	Introduction class
	2nd 04.10.21	Types of estimates, Plinth area
	3rd 08.10.21	Floor area / carpet area
	4th 09.10.21	units and Modes of measuring as per IS 1200
	5th 20.10.21	Accuracy of Measurement for different item of work
SECOND <u>CH-2</u>	1st 23.10.21	Doubt clearing class.
	2nd 25.10.21	Short wall long wall method and centre line method
	3rd 27.10.21	Practice
	4th 29.10.21	deduction in masonry
	5th 30.10.21	plastering, white washing, painting. etc.
THIRD	1st 01.11.21	Multiplying factor for painting of doors and window.
	2nd 03.11.21	Detailed estimate of single storied flat roof
	3rd 05.11.21	Practice
	4th 06.11.21	Rcc roof slab with leak proof treatment over it.
	5th 08.11.21	Practice
FOURTH	1st 10.11.21	It including staircase and mummy room
	2nd 12.11.21	Practice
	3rd 13.11.21	Doubt clearing class
	4th 15.11.21	Doubt clearing class
	5th 17.11.21	class test

-: LESSON PLAN :-

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 :
<u>CH-3</u> FIRST	1st 20.11.21	Analysis of rate for cement concrete
	2nd 22.11.21	brick masonry in cement mortar
	3rd 24.11.21	laterite stone masonry in cement mortar
	4th 26.11.21	cement plaster
	5th 27.11.21	white washing
SECOND	1st 29.11.21	Artificial Stone flooring
	2nd 01.12.21	Tile flooring
	3rd 03.12.21	Concrete flooring
	4th 04.12.21	Rec with centering and shuttering
	5th 06.12.21	Reinforcing steel
THIRD	1st 08.12.21	Painting of doors and windows etc as per ^{OPWD}
	2nd 10.12.21	calculate of lead, lift
	3rd 11.12.21	conveyance charges &
	4th 13.12.21	Royalty of material, etc as per ^{OPWD}
	5th 15.12.21	Abstract of cost of estimate
RTH	1st 17.12.21	Practice
	2nd 18.12.21	Doubt clearing class
	3rd 20.12.21	Valuation - value and cost
	4th 22.12.21	Scrap value, salvage value
	5th	assessed value, sinking fund

-:LESSON PLAN:-

Discipline	Semester	Name of the teaching faculty:-
Subject.	No. Of days / per week class allotted:-	Semester <u>3rd</u> from date: <u>01/10/21</u> To Date: <u>18/01/22</u> No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
FIRST	1st <u>24.12.21</u>	depreciation and obsolesce
	2nd <u>27.12.21</u>	methodx of valuation.
	3rd <u>29.12.21</u>	Practice
	4th <u>31.12.21</u>	Doubt clearing class
	5th <u>01.01.22</u>	
<u>CH-4</u> SECOND	1st <u>05.01.22</u>	Administrative set up and hierarchy of engg. dept. in state govt. section etc.
	2nd <u>07.01.22</u>	continue
	3rd <u>08.01.22</u>	Duties and responsibility of Engineers and different position/level.
	4th <u>10.01.22</u>	continue
	5th <u>12.01.22</u>	Doubt clearing class
THIRD	1st <u>15.01.21</u>	Revision
	2nd <u>17.01.21</u>	Class test.
	3rd	
	4th	
	5th	
FORTH	1st	
	2nd	
	3rd	
	4th	
	5th	


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