

Discipline: CIVIL	Semester: 3RD	Name of Teaching Faculty: -TAPAS KUMAR MALICK
Subject: -Estimation & Cost Evaluation -I	No of Days/Week Class alloted: - 04	Semester from date: 01.08.2023 to 30.11.2023 No of Weeks: 15
Week	Class Day	Theory Topics
1st	1st	1.Introduction:- Types , Concept
	2nd	Units and modes of measurement, Accuracy of work.
	3rd	2.Quantity Estimate of building:- Different methods of estimations
	4th	Shortwall longwall method.
2nd	1st	Basics concepts on shortwall & longwall methods with basic problems.
	2nd	Numerical problems on single roomed building.
	3rd	Numerical problems on double roomed building.
	4th	Numerical problems building with verndah.
3rd	1st	Deductionns in masnory
	2nd	Deductions in Plastering and paintings.
	3rd	Multiplying factor for painting of dopors & windows
	4th	Detailed estimate of single storied flat roof building.
4th	1st	Foundation details calculations
	2nd	Numerical problems on RCC work
	3rd	Numerical Problems contd.
	4th	Centre line mthod
5th	1st	Numerical problems on single roomed building.
	2nd	Numerical problems on double roomed building.
	3rd	Numerical problems building with verndah.
	4th	Difference between longwall shortwall method & centre line method.
6th	1st	Numerical problems of single storied building with foundation details.
	2nd	Numerical problems of single storied building with foundation details contd.
	3rd	Numerical problems on multi roomed building by shortwall longwall method.
	4th	Contd.Numerical problems on multi roomed building by shortwall longwall method.
7th	1st	Contd.Numerical problems on multi roomed building by shortwall longwall method.
	2nd	Numerical problems on multi roomed building by Centre line method.
	3rd	Contd.Numerical problems on multi roomed building by Centre line method.

	4th	Contd.Numerical problems on multi roomed building by Centre line method.
8th	1st	Staircase Estimations
	2nd	Mumty room estimate.
	3rd	Numerical problems staircase .
	4th	Numerical problems on mumty room.
9th	1st	3.Analysis of Rates and Valuation:- Concept
	2nd	Analysis of rates of Cement concrete
	3rd	Numerical problems-Analysis of rates of Cement concrete
	4th	Analysis of rates of brick masnory in cement mortar.
10th	1st	Numerical problems-Analysis of rates of brick masnory in cement mortar.
	2nd	Analysis of rates of Cement plaster.
	3rd	Numerical problems-Analysis of rates of Cement plaster.
	4th	Analysis of rates of Damp proof course.
11th	1st	Numerical problems-Analysis of rates of Damp proof course.
	2nd	Analysis of rates of white washing & artificial stone flooring.
	3rd	Numerical problems-Analysis of rates of white washing & artificial stone flooring.
	4th	Analysis of rates of Tile flooring & concrete flooring.
12th	1st	Numerical problems-Analysis of rates of Tile flooring & concrete flooring.
	2nd	Analysis of rates of RCC with centering and shuttering.
	3rd	Numerical problems-Analysis of rates of RCC with centering and shuttering.
	4th	Analysis of rates of steel and painting of doors and windows.
13th	1st	Numerical problems-Analysis of rates of steel and painting of doors and windows.
	2nd	Calculation of lead & lift.,royalties of materials as per OPWD.
	3rd	Abstract of cost estimate.
	4th	Vluation,scarp value,salvage value.
14th	1st	Depreciation and obsolesce.
	2nd	Methods of valuation.
	3rd	3.Administrative set up of Engg. Organisations:- Set up
	4th	Engineering depts. In state /central/PSUs/Private etc.'
15th	1st	Duties & responsibilities of JEE
	2nd	Duties & responsibilities of SDO,Asst. Executive Engg.
	3rd	Duties & responsibilities of Contractor.
	4th	Summery of Estimation and analysis of rates.

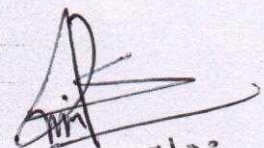
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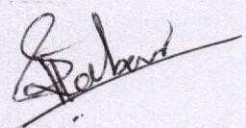
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LESSON PLAN OF 3rd SEMESTER CIVIL ENGINEERING

Discipline :- CIVIL	Semester:- 3	Name of the Teaching Faculty:- SWAYAN RANJAN MISRA
Subject:- Structural Mechanics	No of Days/per Week Class Allotted :- 05	Semester From:- <u>01.08.2023</u> To:- <u>30.11.2023</u> No of Weeks:- 15
Week	Class Day	Theory Topics
1 st	1 st	Review of basic concept of mechanics
	2 nd	Principle mechanics force, moment
	3 rd	Equilibrium , FBDs
	4 th	Centroid: Definition & examples
	5 th	Symmetrical, Asymmetrical Section
2 nd	1 st	Definition of CG & centroid (solid/hollow)
	2 nd	Square, rectangular, circular
	3 rd	Triangle, semi circle
	4 th	Moment of inertia: Definition , MI
	5 th	Polar moment of inertia, Radius of gyration
3 rd	1 st	Section modulus, Polar modulus
	2 nd	Parallel axis theorems, MI of various shape
	3 rd	MI of various symmetrical and Asymmetrical section
	4 th	Simple stress and strain
	5 th	Behavior and property of steel under tension
4 th	1 st	Elasticity, Plasticity, Compressibility, Hardness
	2 nd	Toughness, Malleability, Ductility
	3 rd	Creep, Fatigue, Poof stress
	4 th	Resilience, Modulus of Resilience
	5 th	Longitudinal and Lateral strain
5 th	1 st	Stress, Strain and poison's ratio
	2 nd	Hook's law, Elastic constant, Young's modulus
	3 rd	Bulk's modulus, Rigidity modulus
	4 th	Relation between Elastic constants
	5 th	-do-
6 th	1 st	Application of stress and strain
	2 nd	Mild steel tensile curve and different limit on that curve
	3 rd	Deformation of prismatic bar, Tapered bar
	4 th	Volumetric strain
	5 th	Elongation due to thermal stress
7 th	1 st	Complex stress and strain: Normal stress and shear stress
	2 nd	Principal stresses, Principal plane, major and minor principal stress
	3 rd	Concept of mohr's circle
	4 th	Drawing of mohr's circle
	5 th	Application of mohr's circle in solving problem
8 th	1 st	Bending stress in beam, Assumptions, Equation of Flexure
	2 nd	Flexural stress distribution, Neutral axis, Flexural rigidity, section modulus
	3 rd	shear stress in the beam, distribution of shear stress of different cross section

	4 th	Torsional stress in the beam
	5 th	Combined stress due to moment and torque
	1 st	Column and strut: Definition, long and short column
	2 nd	End condition , Equivalent length, slenderness ratio
	3 rd	Axially loaded short and long column
	4 th	Euler's theory of long column
	5 th	Critical load for different end condition
10 th	1 st	Different types of load in structure
	2 nd	Different types of support condition
	3 rd	Reaction forces and reaction moment
	4 th	Static Equilibrium equation
	5 th	Calculation of various reaction forces
11 th	1 st	Shear force and Bending moment Definition
	2 nd	Sign convention
	3 rd	Shear force diagram of determinate structure
	4 th	SFD for point loading on simple supported, cantilever beam
	5 th	SFD for UDL on simple supported, cantilever beam
12 th	1 st	BMD for point loading on simple supported, cantilever beam
	2 nd	BMD for UDL on simple supported, cantilever beam
	3 rd	Maximum BM and SF, point of contra flexure
	4 th	Problem solving
	5 th	-do-
13 th	1 st	Slope and Deflection: introduction
	2 nd	Importance of slope deflection
	3 rd	Slope deflection by double integration method
	4 th	Slope deflection by Macaulay's method
	5 th	Slope deflection of SS & cantilever beam
14 th	1 st	Indeterminate beam: Introduction
	2 nd	Degree of indeterminacy
	3 rd	Concept of compatibility equation
	4 th	Analysis of propped cantilever , fixed and continuous beam
	5 th	BMD and SFD
15 th	1 st	Trusses: Introduction
	2 nd	Statically determinate and indeterminate structure
	3 rd	Degree of indeterminacy
	4 th	Stable and unstable truss
	5 th	Advantages of trusses
16 th	1 st	DOUBT CLEARING CLASS AND REVISION & PREVIOUS FIVE YEARS QUESTION ANSWER DISCUSSION
	2 nd	
	3 rd	
	4 th	
	5 th	


3/10/23



LESSON PLAN

DISCIPLINE	SEMESTER 3 rd Sem.	Name of the Teaching Faculty: Tapas Ranjan Mishra
Sub: EVS Th.5	No. of Days Per Week: 4 Class Allotted	Semester From Date: 01.08.2023 To Date: 30.11.2023 No. of Weeks: 15 Weeks
Week	Class Day	Theory/Practical Topic
1st	1	Definition, scope and importance, Need for public awareness.
	2	Natural resources and associated problems.
	3	Forest resources: Use and over-exploitation, deforestation, case studies, Timber extraction mining, dams and their effects on forests and tribal people.
	4	Forest resources: Use and over-exploitation, deforestation, case studies, Timber extraction mining, dams and their effects on forests and tribal people.
2nd	1	Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dam's benefits and problems.
	2	Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dam's benefits and problems.
	3	Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources.
	4	Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources.
3rd	1	Food Resources: World food problems, changes caused by agriculture and over grazing, effects of modern agriculture, fertilizers- pesticides problems, water logging, salinity.
	2	Food Resources: World food problems, changes caused by agriculture and over grazing, effects of modern agriculture, fertilizers- pesticides problems, water logging, salinity.
	3	Energy Resources: Growing energy need, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
	4	Land Resources: Land as a resource, land degradation, man induces landslides, soil erosion, and desertification.
4th	1	Land Resources: Land as a resource, land degradation, man induces landslides, soil erosion, and desertification.
	2	Role of individual in conservation of natural resources.
	3	Equitable use of resources for sustainable life styles.
	4	Concept of an eco system.
5th	1	Structure and function of an eco system.
	2	Producers, consumers, decomposers.
	3	Energy flow in the eco systems.
	4	Ecological succession.
6th	1	Food chains, food webs and ecological pyramids.
	2	Introduction, types, characteristic features, structure and function of the following eco system:
	3	Forest ecosystem:
	4	Aquatic eco systems (ponds, streams, lakes, rivers, oceans, estuaries).
7th	1	Introduction-Definition: genetics, species and ecosystem diversity.
	2	Biogeographically classification of India.
	3	Value of biodiversity: consumptive use, productive use, social ethical, aesthetic and option values.
	4	Value of biodiversity: consumptive use, productive use, social ethical, aesthetic and option values.
8th	1	Biodiversity at global, national and local level.
	2	Threats to biodiversity: Habitats loss, poaching of wild life, man wildlife conflicts.
	3	Threats to biodiversity: Habitats loss, poaching of wild life, man wildlife conflicts.
	4	Air pollution
9th	1	Air pollution
	2	Water pollution
	3	Water pollution

	4	Soil pollution
	1	Soil pollution
	2	Marine pollution
	3	Noise pollution
	4	Thermal pollution
11th	1	Nuclear hazards
	2	Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
	3	Role of an individual in prevention of pollution.
	4	Disaster management: Floods, earth quake, cyclone and landslides.
12th	1	Form unsustainable to sustainable development.
	2	Urban problems related to energy.
	3	Water conservation, rain water harvesting, water shed management.
	4	Resettlement and rehabilitation of people; its problems and concern.
13th	1	Environmental ethics: issue and possible solutions
	2	Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, case studies.
	3	Air (prevention and control of pollution) Act.
	4	Water (prevention and control of pollution) Act.
14th	1	Public awareness.
	2	Population growth and variation among nations
	3	Population explosion- family welfare program
	4	Environment and human health
15th	1	Human rights.
	2	Value education
	3	Role of information technology in environment and human health.
	4	Role of information technology in environment and human health.

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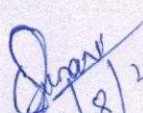
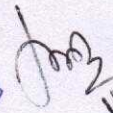
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LESSON PLAN OF 3rd SEMESTER CIVIL ENGINEERING

Discipline :- CIVIL	Semester: 3 rd	Name of the Teaching Faculty:- Tapas Ranjan Mishra and Chinmayee Sunani
Subject:- Geotechnical Engg.	No of Days/per Week Class Allotted :- 04	Semester From:- 01.08.2023 to 30.11.2023 No of Weeks:- 15
Week	Class Day	Theory Topics
1 st	1 st	Introduction Soil and Soil Engineering Scope of Soil Mechanics
	2 nd	Origin and formation of soil
	3 rd	Preliminary Definitions and Relationship Soil as a three Phase system
	4 th	Water Content, Density, Specific gravity, Voids ratio, Porosity
2 nd	1 st	Percentage of air voids, air content, degree of saturation, density Index
	2 nd	Bulk/Saturated/dry/submerged density, Interrelationship of various soil parameters
	3 rd	Numerical Problem
	4 th	Numerical Problem
3 rd	1 st	Index Properties of Soil Water Content
	2 nd	Specific Gravity
	3 rd	Particle size distribution: Sieve analysis, wet mechanical analysis, particle size distribution curve and its uses
	4 th	Consistency of Soils, Atterberg's Limits, Plasticity Index, Consistency Index, Liquidity Index
4 th	1 st	Classification of Soil General Classification
	2 nd	I.S. Classification,
	3 rd	I.S. Classification,
	4 th	Example and Numerical Problem
5 th	1 st	Plasticity chart
	2 nd	Example and Numerical Problem

6 th	3 rd	Permeability and Seepage Concept of Permeability
	4 th	Darcy's Law, Co-efficient of Permeability
	1 st	Factors affecting Permeability
	2 nd	Constant head permeability and falling head permeability Test
7 th	3 rd	Seepage pressure, effective stress
	4 th	phenomenon of quick sand
	1 st	Numerical Problem
	2 nd	Compaction and Consolidation Compaction, Light and heavy compaction Test, Optimum Moisture Content
8 th	3 rd	Optimum Moisture Content
	4 th	
	1 st	Maximum dry density, Zero air void line, Factors affecting Compaction,
	2 nd	Field compaction methods and their suitability
9 th	3 rd	Consolidation
	4 th	Distinction between compaction and consolidation.
	1 st	Terzaghi's model analogy of compression/ springs showing the process of consolidation – field implications
	2 nd	Terzaghi's model analogy of compression/ springs showing the process of consolidation – field implications
10 th	3 rd	Shear Strength Concept of shear strength, Mohr- Coulomb failure theory
	4 th	Cohesion, Angle of internal friction
	1 st	strength envelope for different type of soil
	2 nd	Measurement of shear strength;- Direct shear test,
11 th	3 rd	Triaxial shear Test
	4 th	unconfined compression test and vane-shear test
	1 st	Earth Pressure on Retaining Structures Active earth pressure
	2 nd	Passive earth pressure
	3 rd	Earth pressure at rest.

12 th	4 th	Use of Rankine's formula for the (cohesion-less soil) Backfill with no surcharge,
	1 st	Use of Rankine's formula for the (cohesion-less soil) Backfill with no surcharge,
	2 nd	Use of Rankine's formula for the (cohesion-less soil) backfill with uniform
	3 rd	Use of Rankine's formula for the (cohesion-less soil) backfill with uniform
13 th	4 th	Numerical Problem
	1 st	Foundation Engineering Functions of foundations
	2 nd	shallow and deep foundation
	3 rd	different type of shallow with sketches
14 th	4 th	different type of shallow foundations with sketches
	1 st	different type deep foundations with sketches
	2 nd	different type deep foundations with sketches
	3 rd	Types of failure General shear, Local shear & punching shear
15 th	4 th	Bearing capacity of soil
	1 st	bearing capacity of soils using Terzaghi's formulae
	2 nd	IS Code formulae for strip, Circular and square footings
	3 rd	Effect water table on bearing capacity of soil
	4 th	Plate load test and standard penetration test


 01/8/23
 
 11/8/23

