

| Name Of Faculty : Mr. Ajit Singh | | |
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| Discipline : Civil Engineering | | |
| Semester: VI | | |
| Subject Code & Name : CE-202N,STRUCTURE ANALYSIS -II | | |
| Lesson Plan : 15 weeks (From January, 2019 to April, 2019) | | |
| WEEK | THEORY | |
| | Lecture day | Topic(Assgn./Test) |
| 1st | 1st | Introduction, Static and Kinematic Indeterminacies, Castigliano's theorems, |
| | 2nd | Introduction, Static and Kinematic Indeterminacies, Castigliano's theorems, |
| | 3rd | Strain energy method |
| 2nd | 1st | Strain energy method |
| | 2nd | Strain energy method |
| | 3rd | Strain energy method |
| 3rd | 1st | Analysis of frames with one or two redundant members using Castigliano's 2nd theorem. |
| | 2nd | Analysis of frames with one or two redundant members using Castigliano's 2nd theorem. |
| | 3rd | Castigliano's 2nd theorem. |
| 4th | 1st | Slope deflection and moment Distribution Methods: |
| | 2nd | Slope deflection and moment Distribution Methods: |
| | 3rd | Slope deflection and moment Distribution Methods: |
| 5th | 1st | Slope deflection and moment Distribution Methods: |
| | 2nd | Analysis of continuous beams & portal frames, Portal frames with inclined members. |
| | 3rd | Slope deflection and moment Distribution Methods: |
| 6th | 1st | Analysis of continuous beams & portal frames, Portal frames with inclined members. |
| | 2nd | Slope deflection and moment Distribution Methods: |
| | 3rd | Analysis of continuous beams & portal frames, Portal frames with inclined members. |
| 7th | 1st | Analysis of continuous beams & portal frames, Portal frames with inclined members. |
| | 2nd | Analysis of continuous beams & portal frames, Portal frames with inclined members. |
| | 3rd | Analysis of continuous beams & portal frames, Portal frames with inclined members. |
| 8th | 1st | Analysis of continuous beams & portal frames, Portal frames with inclined members. |
| | 2nd | Analysis of continuous beams & portal frames, Portal frames with inclined members. |
| | 3rd | Analysis of continuous beams & portal frames, Portal frames with inclined members. |
| 9th | 1st | Column Analogy Method: |
| | 2nd | Elastic centre, Properties of analogous column, Applications to beam & frames. |
| | 3rd | Elastic centre, Properties of analogous column, Applications to beam & frames. |
| 10th | 1st | Elastic centre, Properties of analogous column, Applications to beam & frames. |
| | 2nd | Analysis of Two hinged Arches: Parabolic and circular Arches, Bending Moment Diagram for various loadings, Temperature effects, Rib shortening, Axial thrust and Radial Shear force diagrams. |

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| | 3rd | Analysis of Two hinged Arches: |
| 11th | 1st | Parabolic and circular Arches, Bending Moment Diagram for various loadings, Temperature effects, Rib shortening, |
| | 2nd | Axial thrust and Radial Shear force diagrams. |
| | 3rd | Axial thrust and Radial Shear force diagrams. |
| 12th | 1st | Axial thrust and Radial Shear force diagrams. |
| | 2nd | Cable and suspension Bridges: |
| | 3rd | Introduction, uniformly loaded cables, Temperature stresses, three hinged stiffening Girder and two hinged stiffening |
| 13th | 1st | Cable and suspension Bridges: |
| | 2nd | Introduction, uniformly loaded cables, Temperature stresses, three hinged stiffening Girder and two hinged stiffening |
| | 3rd | Cable and suspension Bridges: |
| 14th | 1st | Introduction, uniformly loaded cables, Temperature stresses, three hinged stiffening Girder and two hinged stiffening |
| | 2nd | Unsymmetrical Bending |
| | 3rd | Introduction Centroidal principal axes of sections, Bending stresses in beam subjected to unsymmetrical bending, |
| 15th | 1st | shear centre, shear centre for channel, Angles and Z sections. |
| | 2nd | Unsymmetrical Bending, Bending stresses in beam subjected to unsymmetrical bending, |
| | 3rd | Bending stresses in beam subjected to unsymmetrical bending, |

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| Name Of Faculty : Mr. Pawan Sangwan | | |
| Discipline : Civil Engineering | | |
| Semester: IV | | |
| Subject Code & Name : CE-204 N, Design of Steel Structures - I | | |
| Lesson Plan : 15 weeks (From January, 2019 to April, 2019) | | |
| WEEK | THEORY | |
| | Lecture day | Topic(Assgn./Test) |
| 1st | 1st | Introduction: Introduction to steel structures, various types of loads, structural steel and specifications, structural elements, steel vs concrete |
| | 2nd | Design specification as per IS 800, structural layout, strength and stiffness considerations |
| | 3rd | efficiency of cross-section, safety and serviceability considerations |
| 2nd | 1st | Riveted Connections : Riveting and bolting, various types of bolts and rivets, Failure of riveted joint, efficiency of a joint |
| | 2nd | Design of Riveted Joints, Design Steps |
| | 3rd | Numerical problems-I (Numericals on Riveted Joints) |
| 3rd | 1st | Numerical problems-II (Numericals on Riveted Joints) |
| | 2nd | Concentric riveted joints, Design Steps |
| | 3rd | Numerical problems-III (Numericals on Concentric Riveted Joints) |
| 4th | 1st | Bolted Connections: Advantages and disadvantages of bolted connections, stresses in bolts |
| | 2nd | Numerical problems-IV (Numericals on Bolted connections) |
| | 3rd | Welded Connections: Types of Welds, Design of Welded Connections |
| 5th | 1st | Numerical problems-V (Numericals on Welded Connections) |
| | 2nd | Welded Joints subjected to Eccentric Loads, Simple, semi-rigid and rigid connections |

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| | 3rd | Numerical problems-VI (Numericals on Welded Connections) |
| 6th | 1st | Tension Members: Introduction to tension members, Types of tension members, net-sectional areas, lug angles, splices |
| | 2nd | Design of tension members, Design Steps, Numerical Problem |
| | 3rd | Numerical problems-VII (Numericals on Tension Members) |
| 7th | 1st | Compression Members: Introduction to compression members, Effective length and slenderness ratio, various types of sections used for columns, |
| | 2nd | Built up columns, necessity of built up column, design of built up column, |
| | 3rd | Design of builtup column-laced column, Numerical problem |
| 8th | 1st | Design of builtup column-Battened column, Numerical problem |
| | 2nd | Numerical problems-VIII (Numericals on Compression members) |
| | 3rd | Design of eccentrically loaded compression members |
| 9th | 1st | Numerical problems-IX (Numericals on Eccentrically Loaded Compression members) |
| | 2nd | Column Bases and Footings: Introduction to column bases and footings, Types of column bases |
| | 3rd | Design of Column bases-slab base, Design Steps, numerical Problem |
| 10th | 1st | Design of column bases-gusseted bases, Design Steps, numerical Problems |
| | 2nd | Design of gusseted base subjected to eccentric loading, Numerical Problem |
| | 3rd | Numerical problems-X (Numericals on Column Base and Footings) |
| 11th | 1st | Design of Beams: Introduction to design of Beams, Various types of sections, general design criteria for beams |
| | 2nd | Design of laterally supported beams, numerical problem |
| | 3rd | Design of laterally unsupported beams, numerical problem |
| 12th | 1st | Numerical problems-XI (Numericals on Beams) |
| | 2nd | Design of built up Beam, Design Steps |
| | 3rd | Numerical problems-XII (Numericals on Built up Beams) |
| 13th | 1st | Web-buckling, web crippling and diagonal buckling, Numerical Problem |
| | 2nd | Gantry Girder: Introduction to gantry girder, Various loads on gantry girder, specifications |
| | 3rd | design of gantry girder, numerical problem |
| 14th | 1st | Numerical problems-XIII (Numericals on Built up Beams) |
| | 2nd | Plate Girder: Introduction to Plate Girder, Design steps for plate girder |
| | 3rd | necessity of stiffeners in plate girder, various types of stiffeners |
| 15th | 1st | Web and flange splices, curtailment of flange plates, design of beam to column connections |
| | 2nd | Numerical problems-XIV (Numericals on Plate Girder) |
| | 3rd | Introduction, design of framed and seat connections |

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| Name Of Faculty : Ms. Priyanka | | |
| Discipline : Civil Engineering | | |
| Semester : 4th | | |
| Subject Name & Subject Code : SOIL MECHANICS, CE-208N | | |
| Lesson Plan : 15 weeks (From January, 2019 to April, 2019) | | |
| WEEK | THEORY | |
| | Lecture day | Topic(Assgn./Test) |
| | 1rd | Soil Formation and Composition: Introduction, soil and rock, |
| 1st | 2nt | Soil Mechanics and Foundation Engineering, |

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| | 3rd | origin of soil, weathering, soil formation, major soil deposits of India, |
| | 1st | particle shape, interparticle forces, soil structure, principal clay minerals |
| 2nd | 2nd | Basic Soil Properties: Introduction, three phase system, weight-volume relationships, |
| | 3rd | soil grain properties, soil aggregate properties |
| | 1st | Grain size analysis, sieve analysis, sedimentation analysis, |
| 3rd | 2nd | grain size distribution curves, consistency of soils |
| | 3rd | consistency limits and their determination, |
| | 1st | activity of clays, relative density of sands |
| 4th | 2nd | Classification of soils: Purpose of classification, classification on the basis of grain size, |
| | 3rd | classification on the basis of plasticity, plasticity chart |
| | 1st | Indian Standard Classification System |
| 5th | 2nd | Permeability of Soils: Introduction, Darcy's law and its validity, discharge velocity and seepage velocity, |
| | 3rd | factors affecting permeability, laboratory determination of coefficient of permeability, |
| | 1st | determination of field permeability, permeability of stratified deposits |
| 6th | 2nd | Effective Stress Concept Principle of effective stress, effective stress under hydrostatic conditions, |
| | 3rd | capillary rise in soils, effective stress in the zone of capillary rise, |
| | 1st | effective stress under steady state hydro-dynamic conditions, |
| 7th | 2nd | seepage force, quick condition, |
| | 3rd | critical hydraulic gradient, two dimensional flow |
| | 1st | Laplace's equation, properties and utilities of flownet, |
| 8th | 2nd | graphical method of construction of flownets, piping, protective filter. |
| | 3rd | Compaction: Introduction, role of moisture and compactive effect in compaction, |
| | 1st | laboratory determination of optimum moisture content, |
| 9th | 2nd | moisture density relationship, compaction in field, |
| | 3rd | compaction of cohesionless soils, moderately cohesive soils and clays, field control of compaction. |
| | 1st | Vertical Stress below Applied Loads: Introduction, Boussinesq's equation, |
| 10th | 2nd | vertical stress distribution diagrams, vertical stress beneath loaded areas, |
| | 3rd | Newmark's influence chart, approximate stress distribution methods for loaded areas, |
| | 1st | Westergaard's analysis, contact pressure. |
| 11th | 2nd | Compressibility and Consolidation: Introduction, components of total settlement, |
| | 3rd | consolidation process, one-dimensional consolidation test, |
| | 1st | typical void ratio-pressure relationships for sands and clays, |
| 12th | 2nd | normally consolidated and over consolidated clays, Casagrande's graphical method of estimating pre-consolidation pressure |
| | 3rd | Terzaghi's theory of one-dimensional primary consolidation, determination of coefficients of consolidation, consolidation settlement, |
| | 1st | Construction period settlement, secondary consolidation, |
| 13th | 2nd | Shear Strength: Introduction, Mohr stress circle, Mohr-Coulomb failure-criterion, relationship between principal stresses at failure, shear tests, |
| | 3rd | direct shear test, unconfined compression test, triaxial compression tests, |
| | 1st | drainage conditions and strength parameters, Vane shear test, |
| 14th | 2nd | shear strength characteristics of sands, normally consolidated clays, |

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| | 3rd | over-consolidated clays, and partially saturated soils, sensitivity and thixotropy |
| | 1st | Earth Pressure: Introduction, earth pressure at rest, |
| 15th | 2nd | Rankine's active & passive states of plastic equilibrium, Rankine's earth pressure theory, |
| | 3rd | Coulomb's earth pressure theory, Culmann's graphical construction, Rebhann's construction. |

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| Name of Faculty : Mr. V.K. Ahuja | | |
| Discipline : Civil Engineering | | |
| Semester: IV | | |
| Subject Code & Name : CE- 210N | | |
| Lesson Plan : 15 weeks (From January, 2019 to April, 2019) | | |
| WEEK | THEORY | |
| | Lecture day | Topic (Assignment./Test) |
| 1st | 1st | Introduction to Trigonometrical Levelling |
| | 2nd | Height and distances-base of the object accessible |
| | 3rd | Base of object inaccessible case-I and case-II |
| 2nd | 1st | Base of object inaccessible case-III and case-IV |
| | 2nd | Numericals on all above four cases of object inaccessible |
| | 3rd | Geodetical observation, Effect of Refraction and curvature |
| 3rd | 1st | Effect of Refraction and curvature |
| | 2nd | Axis signal correction |
| | 3rd | Difference in elevation between two points |
| 4th | 1st | Triangulation systems and classification |
| | 2nd | Strength of figure with examples |
| | 3rd | Selection of triangulation stations |
| 5th | 1st | Grade of triangulation, Field work of triangulation |
| | 2nd | Triangulation computations |
| | 3rd | Introduction to E.D.M. instruments with working principle |
| 6th | 1st | Survey Adjustment and Treatment of Observations |
| | 2nd | Errors and Types of errors |
| | 3rd | Definition of weight of an observation, Most probable values |
| 7th | 1st | Law of accidental errors |
| | 2nd | Law of weights |
| | 3rd | Determination of probable error (different cases with examples) |
| 8th | 1st | Determination of probable error (different cases with examples) |
| | 2nd | Principle of least squares |
| | 3rd | Adjustment of triangulation figures by method of least squares |
| 9th | 1st | Adjustment of triangulation figures by method of least squares Examples |
| | 2nd | Astronomy and Definitions of astronomical terms |
| | 3rd | Star at elongation, Star at prime vertical |
| 10th | 1st | Star at horizon, Star at culmination |
| | 2nd | Celestial coordinate systems, Napier's rule of circular parts |
| | 3rd | Various time systems: sidereal, apparent |
| 11th | 1st | Solar and mean solar time |
| | 2nd | Equation of time-its cause |

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| | 3rd | Total station, Working principle and survey with total station |
| 12th | 1st | Total station, Survey with total station in the field |
| | 2nd | Introduction to Photogrammetry and Elements of Photogrammetry |
| | 3rd | Elements of Interpretation of a photograph |
| 13th | 1st | Types of aerial photographs |
| | 2nd | Aerial camera and various parts of aerial camera with functions |
| | 3rd | Height displacements in vertical photographs |
| 14th | 1st | Stereoscopic vision and Stereoscopies |
| | 2nd | Height determination from parallax measurement |
| | 3rd | Flight planning |
| 15th | 1st | Introduction of remote sensing and its systems |
| | 2nd | Concept of G.I.S and G.P.S : -Basic Components |
| | 3rd | Data input, storage & output and Processing of data |