

JMIETI, Radaur

Lesson Plan of Structural Analysis-III

Deptt.Civil Engineering , 5th Semester w.e.f July 2019

Name of Teacher : Amit Raheja

Designation : Assistant Professor

Subject with code :Structural Analysis-III (CE-301N)

Objective of Course :

1. Students will be able to study behaviour in the form of S.F and B.M for continuous beams

 by influence line method

2. Students will be able to analyze the behaviour of rolling load on structures and fixed arches

3. Students will be able to analyze the frames structures

4. Students will be able to study about methods for stiffness and flexibility

|  |  |  |  |
| --- | --- | --- | --- |
| Week & Month | Topic / Chapter Covered | Academic Activity | Test/Assignment |
|  Aug | Introduction to Structural Analysis-III | Lecture  |  |
|  Aug | Introduction to Influence line diagram | Lecture |  |
|  Aug | Influence line diagram for 3-Hinged arch | Lecture |  |
|  Aug | Influence line diagram for Bending Moment at specific point  | Lecture |  |
|  Aug | Influence line diagram for max positive B.M and max negative B.M | Lecture |  |
|  Aug | Influence line diagram for Normal Thrust and Shear Force | Lecture |  |
|  Aug | Influence line diagram for 2-Hinged arch | Lecture |  |
|  Aug | Influence line diagram for max positive B.M and max negative B.M | Lecture |  |
|  Aug | Influence line diagram for Normal Thrust and Shear Force | Lecture |  |
|  Aug | Influence Line for statically indeterminate Beams | Lecture |  |
|  Aug | Muller-Breslau Principle | Lecture |  |
|  Aug | I.L. for B.M. & S.F. for continuous Beams | Lecture |  |
|  Aug | Rolling Loads | Lecture |  |
|  Sep | Single concentrated load | Lecture |  |
| Sep | uniformly distributed load longer than span | Lecture |  |
| Sep | uniformly distributed load shorter than span | Lecture |  |
| Sep | Two point loads, several point loads | Lecture |  |
| Sep | Max. B.M. and S.F. Absolute | Lecture |  |
| Sep | Expression of Fixed arch for Horizontal Thrust and Bending Moment at a section by Elastic centre | Lecture |  |
| Sep | Analysis of continuous beam with both ends fixed by Kani’s Method | Lecture |  |
| Sep | Analysis of continuous beam with both ends hinged by Kani’s Method | Lecture |  |
|  Oct | Analysis of continuous beam with one end fixed and other end hinged by Kani’s Method | Lecture |  |
| Oct | Analysis of simple frames by Kani’s method | Lecture |  |
| Oct | Analysis of frames with different column lengths | Lecture |  |
| Oct | Analysis of frames with different end conditions of the bottom story.  | Lecture |  |
| Oct | Analysis of frames with Horizontal loading | Lecture |  |
| Oct | Analysis of Portal Frame by Portal Method with two storey | Lecture |  |
| Oct | Analysis of Portal Frame by Portal Method with three storey | Lecture |  |
| Oct | Analysis of Portal Frame by Cantilever Method with two storey | Lecture |  |
| Oct | Analysis of Portal Frame by Cantilever Method with three storey | Lecture |  |
|  Nov | Introduction to Matrix Method | Lecture |  |
| Nov | Flexibility Coefficients |  |  |
| Nov | Stiffness Coefficients | Lecture |  |
| Nov | Relation between Flexibility and stiffness method | Lecture |  |
| Nov | Development of flexibility matrices | Lecture |  |
| Nov | Development of stiffness matrices | Lecture |  |
| Nov | Development of flexibility & stiffness matrices for plane frame | Lecture |  |
| Nov | Global axis and local axis | Lecture |  |
| Nov | Analysis of plane frame | Lecture |  |
| Nov | Analysis of continous beam by Flexibility method | Lecture |  |
| Nov | Analysis of continous beam by Stiffness method | Lecture |  |

Outcome of Course: Students will acquire the knowledge about the methods of analysis of different structures

Lecture Plan Of Design of Concrete Structure-I

 Deptt. of Civil Engineering

 Semester :5th Wef July 2019

Name of Teacher: Sandeep Singh charak

Designation: Assistant Professor

Subject code: CE- 303N

*Course Objective:* To learn about the design of different types of structures by using reinforced

 cement concrete (RCC)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Class | Topic/ Chapter covered | Academic activity | Test/ assignment |
| Aug | 5th sem | Elementary treatment of concrete technology | Teaching |  |
| Aug | 5th sem | Physical requirements of cement,. | Teaching |  |
| Aug | 5th sem | aggregate, admixture and reinforcement,  | Teaching | Assignment |
| Aug | 5th sem | Strength and durability, shrinkage and creep.  | Teaching |  |
| Aug | 5th sem | Design of concrete mixes, Acceptability criterion,  | Teaching |  |
| Aug | 5th sem | I.S. Specifications, Design Philosophies in Reinforced Concrete:  | Teaching |  |
| Aug | 5th sem | Working stress and limit state methods,  | Teaching |  |
| Aug | 5th sem | Limit state v/s working stress method,  | Teaching |  |
| Aug | 5th sem | Building code,  | Teaching |  |
| Aug | 5th sem | Normal distribution curve,  | Teaching |  |
| Aug | 5th sem | characteristic strength and characteristics loads,  | Teaching |  |
| Aug | 5th sem | design values, Partial safety factors and factored loads,  | Teaching |  |
| Sep | 5th sem | stress -strain relationship for concrete steel | Teaching | Assignment |
| Sep | 5th sem | stress -strain relationship for steel | Teaching |  |
| Sep | 5th sem | Introduction to Working Stress Method & Limit State method. | Teaching |  |
| Sep | 5th sem | Basic assumptions Working Stress Method & Limit State method | Teaching |  |
| Sep | 5th sem | Numerical problems | Teaching |  |
| Sep | 5th sem | Numerical problems | Teaching |  |
| Sep | 5th sem | Numerical problems | Teaching |  |
| Sep | 5th sem | permissible stresses in concrete and steel,  | Teaching |  |
| Sep | 5th sem | design of singly Reinforced beam | Teaching |  |
| Sep | 5th sem | Numerical problems | Teaching | Assignment  |
| Sep | 5th sem | Numerical problems | Teaching |  |
| Sep | 5th sem | design of doubly Reinforced beam | Teaching |  |
| Sep | 5th sem | Numerical problems | Teaching |  |
| Sep | 5th sem | Numerical problems | Teaching |  |
| Sep | 5th sem | Design of flanged beams in flexure | Teaching |  |
| Sep | 5th sem | Numerical problems | Teaching | Assignment |
| Sep | 5th sem | Steel beam theory, inverted flanged beams,  | Teaching |  |
| Sep | 5th sem | design examples Numerical problems | Teaching |  |
| Sep | 5th sem | Introduction to Columns and Footings:  | Teaching |  |
| Sep | 5th sem | Effective length of Columns | Teaching |  |
| Sep | 5th sem | Minimum eccentricity, short columns under axial compression | Teaching |  |
| Oct | 5th sem | Numerical problems | Teaching |  |
| Oct | 5th sem | Numerical problems | Teaching |  |
| Oct | 5th sem | Uniaxial and biaxial bending,  | Teaching |  |
| Oct | 5th sem | slender columns  | Teaching | Assignment |
| Oct | 5th sem | Isolated and wall footings,  | Teaching |  |
| Oct | 5th sem | Design examples | Teaching |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Class | Topic/ Chapter covered | Academic activity | Test/ assignment |
| Oct | 5th Sem. | Isolated footings  | Teaching |  |
| Oct | 5th Sem. | Design examples | Teaching |  |
| Oct | 5th Sem. |  Wall footing design and reinforcement calculation | Teaching |  |
| Oct | 5th Sem. | Concrete Reinforcement and Detailing:  | Teaching |  |
| Oct | 5th Sem. | Requirements of good detailing cover to reinforcement,  | Teaching |  |
| Oct | 5th Sem. | spacing of reinforcement | Teaching | Test |
| Oct | 5th Sem. | Reinforcement splicing | Teaching |  |
| Oct | 5th Sem. | Anchoring reinforcing bars in flexure and shear | Teaching | Assignment 1 |
| Oct | 5th Sem. | curtailment of reinforcement.  | Teaching |  |
| Oct | 5th Sem. | Introduction to One way and Two Ways Slabs:  | Teaching |  |
| Oct | 5th Sem. | General considerations, Design of one way and two ways slabs  | Teaching |  |
| Oct | 5th Sem. | Design of one way slabs for distributed and concentrated loads,  | Teaching |  |
| Oct | 5th Sem. | Design of two ways slabs for distributed and concentrated loads | Teaching |  |
| Oct | 5th Sem. | Design of Nonrectangular slabs,  | Teaching |  |
| Nov  | 5th Sem. | openings in slabs | Teaching |  |
| Nov | 5th Sem. | Design examples | Teaching | Assignment 2 |
| Nov | 5th Sem. | Retaining Walls: Classification, Design parameter for Retaining walls | Teaching |  |
| Nov | 5th Sem. | Forces on retaining walls, design criteria | Teaching |  |
| Nov | 5th Sem. | stability requirements | Teaching |  |
| Nov | 5th Sem. | Proportioning of cantilever retaining walls | Teaching |  |
| Nov | 5th Sem. | Counter fort retaining walls,  | Teaching |  |
| Nov | 5th Sem. | criteria for design of counterforts,  | Teaching |  |
| Nov | 5th Sem. | criteria for design of counterforts, | Teaching |  |
| Nov | 5th Sem. | design examples | Teaching | Assignment 3 |
| Nov | 5th Sem. | design examples | Teaching |  |
| Nov | 5th Sem. | design examples | Teaching | Test |
| Nov | 5th Sem. | design examples | Teaching |  |
| Nov | 5th Sem. | design examples | Teaching |  |
| Nov | 5th Sem. | design examples | Teaching | Assignment 4  |
| Nov | 5th Sem. | design examples | Teaching |  |



JMIETI, Radaur

Lesson Plan of HYDROLOGY

Deptt. Civil Engineering, 5th Semester w.e.f July 2019

Name of Teacher : Saurabh Jain

Designation : Assistant Professor

Subject with code : C.E-305N

Objective of Course : 1. To have a good understanding of all the components of hydrologic cycle

 2. To understand the mechanics of rainfall, its spatial and temporal distribution.

 3. To understand the fitting of probability distribution and statistical analysis of rainfall and Runoff.

|  |  |  |  |
| --- | --- | --- | --- |
| Week & Month | Topic / Chapter Covered | Academic Activity | Test/Assignment |
| Aug | Hydrologic cycle | Lecture  |  |
| Aug | Scope and application of hydrology to engineering problems | Lecture  |  |
| Aug | Drainage basins and its characteristics | Lecture  |  |
| Aug | Stream geometry & hypsometric curves | Lecture  |  |
| Aug | Precipitation: characteristics of precipitation in India | Lecture  |  |
| Aug | Forms and types of precipitation | Lecture  |  |
| Aug | Measurement of precipitation | Lecture  |  |
| Aug | Recording rain gages | Lecture  |  |
| Aug | Non-recording rain gages | Lecture  |  |
| Aug | Raingage station &raingage network | Lecture  |  |
| Aug | Estimation of missing data | Lecture  | Assignments |
| Aug | Presentation of rainfall data & mean precipitation | Lecture  |  |
| Aug | Depth -Area -Duration relationship | Lecture  |  |
| Aug | Frequency of point rainfall | Lecture  |  |
|  Sep | Intensity -Duration- Frequency curves, Probable Max. Precipitation | Lecture  | Sessional/Test |
|  Sep | Evaporation & Transpiration | Lecture  |  |
|  Sep | Evaporimeters | Lecture  |  |
|  Sep | empirical relationships for Evaporation | Lecture  |  |
|  Sep | analytical method, reservoir evaporation methods of its control | Lecture  |  |
|  Sep | evapotranspiration and its measurement | Lecture  |  |
|  Sep | Penman's equation and potential evapotranspiration. | Lecture  |  |
|  Sep | Infiltration process, initial loss | Lecture  | Assignments |
|  Sep | Infiltration capacity | Lecture  |  |
|  Sep | Measurement of infiltration | Lecture  |  |
| Oct | Infiltration indices | Lecture  |  |
| Oct | Runoff: Factor affecting run-off | Lecture  |  |
| Oct | Estimation of runoff, rainfall-run off relationships | Lecture  |  |
| Oct | Measurement of stage-staff gauge, wire gauge, automatic stage recorder | Lecture  |  |
| Oct | Stage hydrograph | Lecture  |  |
| Oct | Measurement of velocity-current meters, floats, area velocity method | Lecture  |  |
| Oct | Moving boat and slope area method, Electromagnetic, Ultra-sonic | Lecture  | Sessional/ Test |
| Oct | Dilution methods of stream flow measurement | Lecture  |  |
| Oct | Stage discharge relationship. | Lecture  | Assignments |
| Oct | Hydrograph: Discharge hydrograph | Lecture  |  |
| Nov | components and factors affecting shape of hydrograph | Lecture  |  |
| Nov | Effective rainfall | Lecture  |  |
| Nov | unit hydrograph and its derivation | Lecture  |  |
| Nov | unit hydrograph of different durations, use and limitations of UH | Lecture  |  |
| Nov | Triangular UH, Snyder's Synthetic UH, floods, rational methods,empirical formulae | Lecture  |  |
| Nov | UH method, flood frequency methods, Gumbel's method, graphical method, design flood. | Lecture  | Sessional/ Test |
| Nov | Ground Water: Occurrence, types of aquifers, compressibility of aquifers | Lecture  |  |
| Nov | Water table and its effects on fluctuations | Lecture  |  |
| Nov | Wells and springs, movement of ground water, Darcy's law, | Lecture  |  |
| Nov | Permeability and its determination | Lecture  | Assignments |
| Nov | Porosity, specific yield and specific retention, storage coefficient, transmissibility. | Lecture  |  |
| Nov | Well Hydraulics | Lecture  |  |
| Nov | Steady state flow to wells in unconfined and confined aquifers. | Lecture  |  |

Outcome of Course: The students will be able to

1. understand the procedure, applicability and limitations of various methods of geotechnical investigation;
2. Make proper engineering judgments and take appropriate decisions related to geotechnical investigations.

**Lesson Planning for the 5th semester started w.e.f. 1st August, 2019**

Name of Institute : JMIETI Radaur

Name of teacher with designation : Gaurav Dhiman ( A.P)

Department : Civil Engg.

Subject : Geotechnology-1

Course Objective : The subject gives a better idea about the soil and its properties & also design of types of foundation.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Class** | **Topic/Chapter covered** | **Academic activity** | **Test/Assignment** |
| August | 5th Sem | Sub-Surface Exploration: Purpose, stages in soil exploration | Lecture |  |
| August | 5th Sem | Depth and lateral extent of exploration, | Lecture |  |
| August | 5th Sem | Guidelines for various types of structures, ground water observations | Lecture |  |
| August | 5th Sem | Excavation and boring methods, soil sampling and disturbance | Lecture |  |
| August | 5th Sem | Major types of samplers, sounding methods-SCPT, DCPT, SPT & interpretation, | Lecture |  |
| August | 5th Sem | Geo-physical methods, pressure-meter test, exploration logs | Lecture |  |
| August | 5th Sem | Drainage & Dewatering: Introduction | Lecture |  |
| August | 5th Sem | Ditches and sumps | Lecture |  |
| August | 5th Sem | Well point systems, shallow well system | Lecture |  |
| August | 5th Sem | Deep well drainage, vacuum method | Lecture |  |
| August | 5th Sem | Electro-osmosis, consolidation by sand piles, | Lecture |  |
|  August | 5th Sem | Eductor method. | Lecture |  |
| September | 5th Sem | Shallow Foundations-I: Design criteria for structural safety of foundation | Lecture |  |
| September | 5th Sem | (i) location of footing, (ii) shear failure criterion, | Lecture |  |
| September | 5th Sem | (iii) settlement criterion, ultimate bearing capacity, modes of shear failure | Lecture |  |
| September | 5th Sem | Rankine's analysis Tergazi's theory | Lecture |  |
| September | 5th Sem | Skempton's formula, effect of fluctuation of G.W.T. | Lecture |  |
| September | 5th Sem | Effect of eccentricity on bearing capacity, I.S Code recommendations, factors affecting bearing capacity, | Lecture |  |
| September | 5th Sem | Methods of improving bearing capacity | Lecture |  |
| September | 5th Sem | Shallow Foundations-II: Various causes of settlement of foundation, allowable bearing pressure based on settlement | Lecture |  |
| September | 5th Sem | Settlement calculation, elastic and consolidation settlement, allowable settlement according toI.S.Code. | Lecture |  |
| September | 5th Sem | Plate load test and its interpretation, bearing capacity from penetration tests, design bearing capacity | Lecture |  |
| September | 5th Sem | Shallow Foundations-III: Situation suitable for the shallow foundations, types of shallow foundations and their relative merits, | Lecture |  |
| September | 5th Sem | Depth of foundation, footing on slopes, uplift of footings, conventional procedure of proportioning of footings, combined footings | Lecture |  |
| October | 5th Sem | Raft foundations, bearing capacity of raft in sands and clays, various methods of designing rafts, floating foundations. | Lecture |  |
| October | 5th Sem | Pile Foundations-I: Introduction, necessity of pile foundations | Lecture |  |
| October | 5th Sem | Classification of piles, load capacity, static analysis, | Lecture |  |
| October | 5th Sem | Analysis of pile capacity in sands and clays, dynamic analysis | Lecture |  |
| October | 5th Sem | Pile load tests, negative skin friction, batter piles, | Lecture |  |
| October | 5th Sem | Lateral load capacity, uplift capacity of single pile, under-reamed pile. | Lecture |  |
| October | 5th Sem | Pile Foundations-II: Group action in piles, pile spacing | Lecture |  |
| October | 5th Sem | Pile group capacity, stress on lower strata, settlement analysis | Lecture |  |
| October | 5th Sem | Design of pile caps, negative skin friction of pile group | Lecture |  |
| October | 5th Sem | Uplift resistance of pile group, lateral resistance, batter pile group | Lecture |  |
| October | 5th Sem | Drilled piers-types, uses | Lecture |  |
| October | 5th Sem | Drilled Piers bearing capacity, settlement, construction procedure. | Lecture |  |
| November | 5th Sem | Caissons-Types, bearing capacity and settlement | Lecture |  |
| November | 5th Sem | Caisson Foundations construction procedure | Lecture |  |
| November | 5th Sem | Well foundations-shapes, depth of well | Lecture |  |
| November | 5th Sem | Well foundations components, factors affecting well foundation | Lecture |  |
| November | 5th Sem | Design lateral stability, construction procedure, | Lecture |  |
| November | 5th Sem | Sinking of wells | Lecture |  |
| November | 5th Sem | Rectification of tilts and shifts, | Lecture |  |
| November | 5th Sem | Recommended values of tilts  | Lecture |  |
| November | 5th Sem | Recommended values of shifts as per I.S.3955 | Lecture |  |

Course Outcome

1. Students will be able to study the sub-surface soil and its properties and methods of sampling and testing.

2. Students will be able to study the different types of shallow foundation and its design.

3. Students will be able to study the different types of pile foundation and its design.

4. Students will be able to study the different types of. Drilled Piers and Caisson Foundations and their design.

Lesson Plan for Project Planning and Management

 Deptt of Civil Engineering ,

5th semester w.e.f. July, 2019

Name of Institute : JMIETI Radaur

Name of teacher with designation : MEGHAV GUPTA ( A.P)

Department : Civil Engg.

Subject : PPM

Subject Code : C.E- 309N

Course Objective: To have better understanding about the planning and management of construction Projects.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Class | Topic/Chapter covered | Academic activity | Test/Assignment |
| August | 5th Sem | Construction Management, Significance, | Lecture |  |
| August | 5th Sem | Objectives and functions of construction management | Lecture |  |
| August | 5th Sem | Types of constructions, resources for construction industry | Lecture |  |
| August | 5th Sem | Stages for construction, construction team | Lecture |  |
| August | 5th Sem | Engineering drawings | Lecture |  |
| August | 5th Sem | Specifications, important conditions of contract, arbitration | Lecture |  |
| August | 5th Sem | Types of contracts, contract documents | Lecture |  |
| August | 5th Sem | Construction Planning | Lecture |  |
| August | 5th Sem | Work breakdown structure | Lecture |  |
| August | 5th Sem | Stages in planning-pre-tender stages, contract stage | Lecture |  |
| August | 5th Sem | Scheduling | Lecture |  |
|  August | 5th Sem | Scheduling by bar charts | Lecture |  |
| September | 5th Sem | Preparation of material, equipment,  | Lecture |  |
| September | 5th Sem | Labour chart ,Finance schedule | Lecture |  |
| September | 5th Sem | Limitation of bar charts, milestone charts | Lecture |  |
| September | 5th Sem | Construction Organization,Principles of Organization | Lecture |  |
| September | 5th Sem | Communication, leadership and human relations | Lecture |  |
| September | 5th Sem | Types of Organizations, Organization for construction firm | Lecture |  |
| September | 5th Sem | Site organization, temporary services | Lecture |  |
| September | 5th Sem | Job layout and its effects | Lecture |  |
| September | 5th Sem | Network Techniques in Construction Management- CPM | Lecture |  |
| September | 5th Sem | Classification of activities, rules for developing networks | Lecture |  |
| September | 5th Sem | Network development-logic of network, allocation of time to various activities | Lecture |  |
| September | 5th Sem | Fulkerson's rule for numbering events | Lecture |  |
| October | 5th Sem | Determination of project schedules, critical path | Lecture |  |
| October | 5th Sem | Ladder construction, float in activities, shared float, updating, | Lecture |  |
| October | 5th Sem | Resources allocation, resources smoothing and resources leveling. | Lecture |  |
| October | 5th Sem | Network Techniques in Construction Management-II-PERT | Lecture |  |
| October | 5th Sem | Probability concept in network | Lecture |  |
| October | 5th Sem | Deviation, variance, standard deviation, slack critical path | Lecture |  |
| October | 5th Sem | Probability of achieving completion time, central limit theorem. | Lecture |  |
| October | 5th Sem | Cost-Time Analysis, Cost versus time | Lecture |  |
| October | 5th Sem | Direct cost, indirect cost,  | Lecture |  |
| October | 5th Sem | Contracting the network for cost optimization | Lecture |  |
| October | 5th Sem | Steps in time cost optimization | Lecture |  |
| October | 5th Sem | Total project cost and optimum duration | Lecture |  |
| November | 5th Sem | Inspection & Quality Control | Lecture |  |
| November | 5th Sem | Principles of inspection, | Lecture |  |
| November | 5th Sem | Enforcement of specifications | Lecture |  |
| November | 5th Sem | Stages in inspection | Lecture |  |
| November | 5th Sem | Stages in quality control | Lecture |  |
| November | 5th Sem | Testing of structures | Lecture |  |
| November | 5th Sem | Statistical analysis | Lecture |  |

Course Outcome:

1. Students will be able to study the construction contracts and their management.

2. Students will be able to plain the construction projects and job layout.

3. Students will be able to study the time management of the construction projects by different methods.

4. Students will be able to study the cost management and quality control analysis of the construction projects.

Lesson Plan for Concrete Technology

 5th semester started w.e.f. 1st August, 2019

Name of Institute : JMIETI, Radaur

Name of teacher with designation : Rajesh Sagwal ( A.P)

Department : Civil Engg.

Subject : Concrete Technology (CE-311 N)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Class | Topic/ Chapter covered | Academic activity | Test/ assignment |
| August | 5th Sem. | Introduction of Concrete, preparation of concrete, grades of concrete, advantages of concrete | Teaching |  |
| August | 5th Sem. | Concept of quality control. Cement: Introduction of Cement, ingredient in cement. basic chemistry, types of cement, ordinary Portland cement, | Teaching |  |
| August | 5th Sem. | Low heat cement, sulphate resistant cement, Portland-pozzolona cement, high strength Portland cement, high alumina cement, waterproof cement, white Portland cement, hydrophobic cement, colored Portland cement | Teaching |  |
| August | 5th Sem. | Field and laboratory tests on cement. Pozzolanic materials, Fly ash, metakaoline, GGBS, iron slag, rise husk ash - its types, properties | Teaching |  |
| August | 5th Sem. | Applications & limitations, waterproof cement, white Portland cement, hydrophobic cement, colored Portland cement | Teaching | Assignment |
| August | 5th Sem. | Aggregates, classification of aggregates based on petrography, size, shape and textures, deleterious substances | Teaching |  |
| August | 5th Sem. | Bulking of fine aggregates, sieve analysis, grading of aggregates as per IS-383-1970 | Teaching |   |
| August | 5th Sem. | Maximum size of aggregate, Quality of mixing water, curing water, fineness modulus | Teaching |  |
| August | 5th Sem. | Production of Concrete: Introduction, Design of mix by IS & ACI methods including batching of materials, mixing of concrete | Teaching | Assignment |
| August | 5th Sem. | Transportation of concrete, compaction of concrete, ready mixed concrete | Teaching |  |
| September | 5th Sem. | Vibrators, Internal vibrators, external vibrators, concrete curing and formwork removal | Teaching |  |
| September | 5th Sem. | Properties of Concrete: Introduction, workability, factors influencing workability, measurement of workability, requirements of workability | Teaching |  |
| September | 5th Sem. | Properties of hardened concrete, stress and strain characteristics of concrete | Teaching |  |
| September | 5th Sem. | Young’s modulus of concrete, creep and shrinkage of concrete | Teaching |  |
| September | 5th Sem. | Permeability of concrete, durability of concrete sulphate attack, fire-resistance | Teaching |  |
| September | 5th Sem. | Thermal properties of concrete, construction joints, expansion and contraction joints. | Teaching |  |
| September | 5th Sem. | Non-Destructive Testing of Concrete: Significance of Non-Destructive | Teaching |  |
| September | 5th Sem. |  Rebound Hammer, Ultrasonic pulse velocity technique | Teaching |  |
| September | 5th Sem. | Penetration techniques, pullout tests, vibration methods | Teaching |  |
| September | 5th Sem. | Radioactive techniques, Cover meter, core-tests | Teaching |  |
| September | 5th Sem. | Deterioration of Concrete & its Prevention: Causes of concrete deterioration | Teaching | Assignment |
| October | 5th Sem. |  Deterioration by water, surface weir, frost action, deterioration by chemical reactions | Teaching |  |
| October | 5th Sem. | Young’s modulus of concrete, creep and shrinkage of concrete | Teaching |  |
| October | 5th Sem. | Properties of Concrete: Introduction, workability, factors influencing workability, measurement of workability, requirements of workability | Teaching |  |
| October | 5th Sem. | Repair Technology for Concrete Structures: Symptoms and diagnosis of distress | Teaching |  |
| October | 5th Sem. | Evaluation of cracks, repair of cracks | Teaching |  |
| October | 5th Sem. | Common types of repairs, distress in fire damaged structures | Teaching |  |
| October | 5th Sem. | Underwater repairs and Special Concrete: Light weight concrete, definition and its properties, applications | Teaching |  |
| October | 5th Sem. | High strength concrete, definitions, its properties and applications | Teaching |  |
| October | 5th Sem. | Mass Concrete, waste material based concrete, shortcrete, fiber reinforced concrete. | Teaching |  |
| November | 5th Sem. | Materials Fibres types and properties, ferrrocement | Teaching |  |
| November | 5th Sem. | Ferrrocement, polymer concrete composites, heavy weight concrete for radiation shielding | Teaching |  |
| November | 5th Sem. | Prestressed Concrete: Introduction, basic concepts | Teaching |  |
| November | 5th Sem. | Basic concepts, classifications and types of prestressing, prestressing systems | Teaching |  |
| November | 5th Sem. | Properties of materials, pre tensioned and post tensioned concrete elements. | Teaching |  |
| November | 5th Sem. | Light weight concrete, definition and its properties, applications, high strength concrete, definitions, its properties and applications, Mass Concrete | Teaching |  |
| November | 5th Sem. |  Symptoms and diagnosis of distress, evaluation of cracks, repair of cracks | Teaching |  |
| November | 5th Sem. |  Light weight concrete, definition and its properties, applications, high strength concrete, definitions, its properties and applications, Mass Concrete, waste material based concrete, shortcrete, fiber reinforced concrete | Teaching | Assignment |
| November | 5th Sem. | Repair Technology for Concrete Structures: Symptoms and diagnosis of distress | Teaching |  |