Lesson Plan

Name of Faculty	Er. Saibal Bharti
Discipline	Civil Engineering
Semester	3rd
Subject	Fluid Mechanics
Lesson Plan Duration	Sep. 2022 – Dec. 2022

Week	Topics	Description
1st (1 Sep.– 7 Sep)	1. Properties of fluid	1.1 Properties of fluid 1.1.1 Density or mass density 1.1.2 Specific volume 1.1.3 Specific gravity 1.2 Viscosity 1.2.1 Units of viscosity 1.2.2 Kinematic viscosity 1.2.3 Newton's law of viscosity 1.2.4 Variation of viscosity with temperature 1.3 Surface tension and capillarity 1.4 Numerical Problems on all properties
2nd (8 Sep.--14 Sep.)	1. Properties of fluid 2. Pressure and its measurement:	1.5 Fluid Kinematics, Fluid dynamics 1.6 Types of fluid 2.1 Fluid pressure at a point 2.2 Pascal Law
3rd (15 Sep. – 21 Sep.)	2. Pressure and its measurement:	2.3 Absolute, Gauge, Atmospheric, and vacuum pressure (Numerical Problems) 2.4 Simple manometer (numerical problems) 2.4.1 Piezometer 2.4.2 U-tube manometer 2.4.3 Single column manometer 2.5 Differential manometer 2.5.1 U-tube differential manometer
4th (22 Sep. – 28 Sep.)	2. Pressure and its measurement: 3. Hydrostatic forces on surfaces:	2.5.2 Inverted U-tube differential manometer 3.1 Total pressure and centre of pressure 3.2 Vertical plane surfaces submerged in water (Derivation &Numerical problems)
5th (29 Sep. – 5 Oct.)	3. Hydrostatic forces on surfaces: 4. Kinematics of flow	3.3 Inclined plane surfaces submerged in water (Derivation &Numerical problems) 4.1 Type of fluid flow 4.1.1 Steady and Unsteady flow
	Class Test – 1	**In Second Week of October 2022.**
6th (6 Oct.– 12Oct.)	4. Kinematics of flow	4.1.2 Uniform and Non uniform flow 4.1.3 Laminar and Turbulent flow 4.1.4 Compressible and Incompressible flow 4.1.5 Rotational and Irrotational flow 4.1.6 Sub-critical, Critical and super critical flow 4.2 Rate of flow or discharge 4.3 Continuity equation (No Derivation only Numerical problems)
7th (13 Oct. – 19 Oct.)	5. Dynamics of Fluid flow	5.1 Bernoulli's equation (No derivation) 5.2 Applications of Bernoulli's equation 5.2.1 Venturimeter (Numerical problems, No derivations of

		formulae)
8th (20 Oct.– 26 Oct.)	5. Dynamics of Fluid flow 6. Notches and weirs	5.2.2 Pitot tube (Numerical problems) 6.1 Classification of notches and weir 6.2 Discharge over a rectangular notch or weir (With derivation of formula and numerical problems)
	Class Test – 2	**In Second week of November 2022**
9th (27 Oct. – 2 Nov.)	6 Notches and weirs	6.3 Discharge through a triangular notch (With derivation of formula and numerical problems) 6.4 Advantages of Triangular notch over Rectangular notch 6.5 Discharge through a trapezoidal notch (With derivation of formula and numerical problems)
10th (3 Nov.– 9 Nov.)	7.Flow through Pipes	7.1 Loss of energy in pipe 7.2 Loss of energy due to friction (Numerical Problems)
11th (10 Nov. – 16 Nov.)	7.Flow through Pipes	7.3 Minor energy losses (no derivation of formula) 7.3.1 Loss of head due to sudden enlargement 7.3.2 Loss of head due to sudden contraction 7.3.3 Loss of head at the entrance of pipe 7.3.4 Loss of head at the exit of pipe 7.3.5 Loss of head due to an obstruction in a pipe 7.3.6 Loss of head due to bend in pipe 7.3.7 Loss of head in various pipe fitting 7.3.8 (Numerical problems on all above losses) 7.4 Flow through pipe in series or flow through compound pipe (Numerical Problems) 7.5 Flow through parallelpipe (Numerical Problems)
12th (17 Nov.– 23 Nov.)	8. Flow through open channels	8.1 Introduction 8.2 Discharge through open channel by Chezy's formula (No derivation, Numerical problem only) 8.3 Most economical section of channel8.3.1 Most economical rectangular channel (Derivation & Numerical problem)
13th (1 Dec.—7 Dec.)	House Test	**In Forth Week of November 2022.**
14th (8 Dec.—14 Dec.)	8. Flow through open channels 9.Hydraulic Pumps	8.3.2 Most economical Trapezoidal channel (Derivation & Numerical problem) 8.3.3 Best side slope for most economical trapezoidal channel Types of Pumps: Reciprocating pump, Centrifugal pumps, Construction/working and applications of pumps (No numericals and derivations) (may be demonstrated with the help of working models)
15th (15 Dec—20 Dec.)	Revision and Doubt Clearance	Revision and Doubt Clearance

NOTE: Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Saibal Bharti 27/08/22
Signature of Teacher
(Er. Saibal Bharti)

Signature of HOD/OIC
(Er. Amandeep Singh)

R.G.Government Polytechnic Banikhet,Distt. Chamba H.P-176303

Department of Civil Engineering

Lesson Plan

Name of Faculty	Sh. Abhishek Patial
Discipline	Civil Engineering
Semester	3rd
Subject	Applied Mechanics (L-4 Hrs./Week)
Lesson Plan Duration	September – December 2022

Week	Topic	Theory
1st (1 Sept. - 7 Sept.)	1. Introduction	1.1 Concept of engineering mechanics (Applied Mechanics), definition of mechanics, statics, dynamics, application of engineering mechanics in practical fields.
2nd (8 Sept. – 14 Sept.)	1. Introduction	1.2 Definition of mass and weight basic quantities and derived quantities of basic units and derived units 1.3 Concept of rigid body, scalar and vector quantities
3rd (15 Sept. – 21 Sept.)	2. Laws of forces	2.1 Definition of force, measurement of force in SI units, its representation, Point force/concentrated force & Uniformly distributed force, characteristics of a force, effects of force, 2.2 Different force systems (coplanar and non-coplanar), principle of transmissibility of forces, law of super-position
4th (22 Sept. – 28 Sept.)	2. Laws of forces	2.3 Composition and resolution of coplanar concurrent forces, resultant force, method of composition of forces, laws of forces, triangle law of forces, polygon law of forces-graphically, analytically, resolution of forces, resolving a force into two rectangular components 2.4 Free body diagram
5th (29 Sept. –5 Oct.)	2. Laws of forces	2.5 Equilibrant force and its determination 2.6 Lami's theorem (concept only)
Class Test – 1		In Second Week of October 2022.
6th (6 Oct. – 12 Oct.)	3. Moment	3.1 Concept of moment 3.2 Moment of a force and units of moment 3.3 Varignon's theorem
7th (13 Oct. – 19 Oct.)	3. Moment	3.4 Principle of moment and its applications (Levers – simple and compound, balance steel yard, safety valve, reaction at support) 3.5 Parallel forces (like and unlike parallel force), calculating their resultant 3.6 Concept of couple, its properties and effects
8th 20 Oct. – 26 Oct.)	3. Moment	3.7 General conditions of equilibrium of bodies under coplanar forces 3.8 Position of resultant force by moment

9th (27 Oct. – 2 Nov.)	4. Friction	4.1 Definition and concept of friction, types of friction, force of friction 4.2 Laws of static friction, coefficient of friction, angle of friction, angle of repose, cone of friction
10th (3 Nov. – 9 Nov.)	4. Friction	4.3 Equilibrium of a body lying on a horizontal plane, equilibrium of a body lying on a rough inclined plane
Class Test – 2		**In Second Week of November 2022.**
11th (10 Nov. – 16 Nov.)	4. Friction	4.4 Calculation of least force required to maintain equilibrium of a body on a rough inclined plane subjected to a force: a) Acting along the inclined plane horizontally b) At an angle with the inclined plane
12th (17 Nov. – 23 Nov.)	5. Centre of Gravity	5.1 Concept, definition of centroid of plain figures and centre of gravity of symmetrical solid bodies 5.2 Determination of centroid of plain and composite lamina using moment method only, centroid of bodies with removed portion.
House Test		**In Fourth Week of November 2022.**
13th (24 Nov. – 30 Nov.)	5. Centre of Gravity	5.3 Determination of center of gravity of solid bodies - cone, cylinder, hemisphere and sphere; composite bodies and bodies with portion removed.
14th (1 Dec. – 7 Dec.)	6. Simple Lifting Machines	6.1. Definition of effort, velocity ratio, mechanical advantage and efficiency of a simple machine and their relationship, law of machines. Examples of Simple and compound machines 6.2. Definition of ideal machine, reversible and self-locking machine
15th (8 Dec. – 14 Dec.)	6. Simple Lifting Machines	6.3. Effort lost in friction, Load lost in friction, determination of maximum mechanical advantage and maximum efficiency 6.4 System of pulleys (first, second, third system of pulleys), determination of velocity ratio, mechanical advantage and efficiency
16th (15 Dec. – 20 Dec.)	6. Simple Lifting Machines	6.5. Working principle and application of inclined plane, wheel and axle, different pulley blocks, simple screw jack, worm and worm wheel, single and double winch crab. Expression for their velocity ratio and field of their application

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Abhishek

Signature of Teacher
(Er. Abhishek Patial)

Signature of HOD/OIC
(Er. Amandeep Singh)

R. G. Government Polytechnic Banikhet Distt. Chamba H.P.-176303

Department of Civil Engg.

Lesson Plan

Name of Faculty	Er. Parveen Kumar
Discipline	Civil Engineering
Semester	3rd
Subject	Surveying-I (L-3 Hrs./week)
Lesson Plan Duration	September – December 2022

Week	Topic	Theory
1st (1 Sept. - 7 Sept.)	1. Introduction	1.1 Basic principles of surveying. 1.2 Concept, Purpose and Classification of surveying, Measurements - linear and angular, units of measurements. 1.3 Instruments used for taking these measurements.
2nd (8 Sept. - 14 Sept.)	2. Chain Surveying	2.1 Introduction Principle, and operations involved in chaining, advantages and disadvantages. Instruments used for setting right angles, different types of chains. 2.2 Direct and indirect ranging.
3rd (15 Sept. – 21 Sept.)	2. Chain Surveying	2.2 Offsets and recording of field notes, Conventional signs used in chain surveying. 2.3 Error in length due to incorrect chain & its numerical problems
4th (22 Sept. – 28 Sept.)	3. Compass Surveying	3.1 Purpose of compass surveying. Use of prismatic compass: Setting and taking observations. 3.2 Types of Compass - Prismatic & Surveyor's.
5th (29 Sept. – 5 Oct.)	3. Compass Surveying	3.3 Concept of following with simple numerical problems: a) Meridian - Magnetic and true b) Bearing - Magnetic, True and Arbitrary c) Whole circle bearing and reduced bearing d) Fore and back bearing e) Magnetic dip and declination
Class Test – 1		In Second Week of October 2022.
6th (6 Oct. – 12 Oct.)	3. Compass Surveying	3.4 Local attraction - causes, detection, errors and corrections, problems on local attraction, magnetic dip, declination and calculation of local attraction, correct bearing & true bearing & included angles in a compass traverse.
7th (13 Oct. – 19 Oct.)	4. Leveling	4.1 Purpose of leveling, concept of a level surface, horizontal surface, vertical surface, datum, reduced level and bench marks 4.2 Identification of various parts of Dumpy level and IOP level and use of Dumpy level
8th (20 Oct. – 26 Oct.)	4. Leveling	4.3 Concepts of line of collimation, axis of the bubble tube, axis of the telescope and vertical axis 4.4 Leveling staffs: single piece, folding, invar precision staff and telescopic
9th (27 Oct. – 2 Nov.)	4. Leveling	4.5 Temporary adjustment of dumpy level 4.6 Concept of back sight, foresight, intermediate sight, change point and to determine reduce levels.
10th (3 Nov. – 9 Nov.)	4. Leveling	4.7 Use of Level book and calculation of reduced levels by: 4.7.1 Height of collimation method and 4.7.2 Rise and fall method
Class Test – 2		In Second Week of November 2022.
11th (10 Nov. – 16 Nov.)	4. Leveling	4.8 Arithmetic checks, problems on reduction of levels, fly leveling, check leveling and profile leveling, errors in leveling, permissible limits, reciprocal leveling. (Numerical problems) 4.9 Auto Level: Introduction, principle of auto level, use of auto level, advantages and disadvantages of auto level.
12th (17 Nov. – 23 Nov.)	5. Plane Table Surveying	5.1 Purpose of plane table surveying, equipment used in plane table survey. 5.2 Setting of a plane table: (a) Centering (b) Levelling (c) Orientation
	House Test (Centralized)	In Forth Week of November 2022.
13th (24 Nov. – 30 Nov.)	5. Plane Table Surveying	5.3 Methods of plane table surveying (a) Radiation (b) Intersection (c) Traversing (d) Resection
14th (1 Dec. – 7 Dec.)	5. Plane Table Surveying	5.4 Two-point problem 5.5 Three-point problem by a) Mechanical Method (Tracing paper) b) Bessel's Graphical Method
15th (8 Dec. – 14 Dec.)	5. Plane Table Surveying	5.5 Three-point problem by c) Trial and error, LEHMAN'S RULES method. 5.6 Errors in plane table survey and precautions to control them.
16th (15 Dec. – 20 Dec.)	Revision & Doubt Clearance	Revision & Doubt Clearance

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Signature of Teacher
(Er. Parveen Kumar)

Signature of HOD/OIC
(Er. Amandeep Singh)

R.G.Government Polytechnic Banikhet,Distt. Chamba H.P-176303

Department of Civil Engineering

Lesson Plan

Name of Faculty	Sh. Abhishek Patial
Discipline	Civil Engineering
Semester	3rd
Subject	Construction Materials (L-3 Hrs./Week)
Lesson Plan Duration	September – December 2022

Week	Topic	Theory
1st (1 Sept. - 7 Sept.)	1. Building Stones	1.1 Classification of Rocks:(General Review) 1.1.1 Geological classification: Igneous, sedimentary and metamorphic rocks 1.1.2 Chemical classification; Calcareous, argillaceous and siliceous rocks 1.1.3 Physical classification: Unstratified, startified and foliated rocks 1.2 General characteristics of stones – Marble, Kota stone, Granite, Sand, Trap, Basalt stone, Lime stone and Slate.
2nd (8 Sept. – 14 Sept.)	1. Building Stones	1.3 Requirements of good building stones 1.4 Various uses of stones in construction
3rd (15 Sept. – 21 Sept.)	2. Bricks 3.	2.1 Introduction to bricks 2.2 Raw materials for brick manufacturing and properties of good brick making earth
4th (22 Sept. – 28 Sept.)	2. Bricks	2.3 Classification and specifications of bricks as per BIS:1077
5th (29 Sept. –5 Oct.)	2. Bricks	2.4 Blocks: Concrete Precast, Meshing paver block
Class Test – 1		In Second Week of October 2022.
6th (6 Oct. – 12 Oct.)	3.Cement & Lime	3.1 Introduction, raw materials, flow diagram of manufacturing of cement by dry process.
7th (13 Oct. – 19 Oct.)	3.Cement & Lime	3.2 Various types of Cements, their uses: Ordinary portland cement, rapid hardening cement, low heat cement, high alumina cement, blast furnace slag cement, white and coloured cement, Portland pozzolana cement, super sulphate cement

8th 20 Oct. – 26 Oct.)	3.Cement & Lime	3.3 Properties of Compounds of cement.
9th (27 Oct. – 2 Nov.)	3.Cement & Lime	3.4 Introduction: Lime as one of the cementing materials 3.5 Classification and types of lime as per BIS Code
10th (3 Nov. – 9 Nov.)	3.Cement & Lime	3.6 Calcination and slaking of lime 3.7 Process of setting and hardening action of lime.
Class Test – 2		In Second Week of November 2022.
11th (10 Nov. – 16 Nov.)	4. Timber and Wood Based Products	4.1 Seasoning of timber: Purpose, methods of seasoning as per BIS Code 4.2 Properties of timber and specifications of structural timber.
12th (17 Nov. – 23 Nov.)	4. Timber and Wood Based Products	4.3 Defects in timber, decay in timber 4.4 Preservation of timber and methods of treatment as per BIS.
House Test		In Fourth Week of November 2022.
13th (24 Nov. – 30 Nov.)	4. Timber and Wood Based Products	4.5 Other wood based products, their brief description and uses of laminated board, block board, hard board.
14th (1 Dec. – 7 Dec.)	5. Paints and Varnishes	5.1 Introduction, purpose and use of paints 5.2 Types, ingredients, properties and uses of oil paints, water paints and cement paints
15th (8 Dec. – 14 Dec.)	5. Paints and Varnishes	5.3 Covering capacity of various paints 5.4 Types, properties and uses of varnishes
16th (15 Dec. – 20 Dec.)	6. Metals	6.1 Ferrous metals: Composition, properties and uses of cast iron, mild steel, HYSD steel, high tension steel as per BIS. 6.2 Commercial forms of ferrous, metals. 6.3 Aluminium & Stainless Steel.

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Abhishek

Signature of Teacher
(Er. Abhishek Patial)

Signature of HOD/OIC
(Er. Amandeep Singh)

Lesson Plan

Name of Faculty	Er. Amandeep Singh
Discipline	Civil Engineering
Semester	3rd
Subject	Building Construction
Lesson Plan Duration	September 2022 – December 2022

Week	Topics	Description
1st (1 September – 3 September)	1.Introduction	1.1 Definition of a building, classification of buildings based on occupancy & structural systems 1.2 Different parts of a building.
2nd (5 September – 9 September)	2. Foundations	2.1 Concept of foundation and its purpose 2.2 Types of foundation-shallow and deep 2.2.1 Shallow foundation -constructional details of: Spread foundations for walls, thumb rules for depth and width of foundation and thickness of concrete block
3rd (12 September – 17 September)	2. Foundations	, 2.2.2 Deep Foundations: Pile and Well foundations; types and construction details2.3 Earthwork 2.3.1 Layout/setting out of building foundation
4th (19 September – 24 September)	3. Walls	3.1 Purpose of walls 3.2 Classification of walls -load bearing, non-load bearing, dwarf wall, retaining, breast walls and partition walls, shear walls
5th (26 September – 30 September)	4. Brick Masonry	4.1 Brick Masonry: Definition of terms like header, stretcher, queen closer, king closer, frog and quoin, course, bond, facing, backing, hearting, jambs, reveals, soffit, plinth, pillars and pilasters 4.1.1 Bond– meaning and necessity; English, Flemish bond and other types.
6th (3 October - 7 October)	Class Test 1 4. Brick Masonry	4.1.2 Construction of brick walls –methods of laying bricks in walls, precautions observed in the construction of walls, methods of bonding new brick work with old (toothing, raking, back and block bonding)
7th (10 October – 15 October)	5. Stone Masonry	5.1 Glossary of terms – natural bed, bedding planes, string course, corbel, cornice, block in course grouting, moulding, templates, corner stone, bond stone, throating, through stone, parapet, coping, pilasters and buttress
8th (17 October – 22 October)	5. Stone Masonry	5.2 Types of stone masonry: rubble masonry - random and coursed; Ashlar masonry, principles to be observed in construction of stone masonry walls
10th (24 October – 29 October)	6. Arches and Lintels	6.1 Meaning and use of arches and lintels: 6.2 Glossary of terms used in arches and lintels- abutment, pier, arch ring, intrados, soffit, extrados, voussoiers, springer, springing line, crown, key stone, skew back, span, rise, depth of an arch, haunch, spandril, jambs, bearing, thickness of lintel, effective span
11th (1 November – 5 November)	6. Arches and Lintels	6.3 Arches: 6.3.1Types of Arches-Semicircular, segmental, elliptical and parabolic, flat, inverted and relieving 6.4 Lintels 6.4.1 Purpose of lintel 6.4.2

Lesson Plan

		Materials used for lintels 6.4.3 Cast-in-situ and pre-cast lintels.
12th (7 November – 11 November)	Class Test 2 7. Doors, Windows and Ventilators	7.1 Glossary of terms with neat sketches 7.2 Classification based on materials i.e. wood, metal and plastic and their suitability for different situations. Different type of doors- paneled door, flush door, glazed door, rolling shutter, steel door, sliding door, plastic and aluminum doors. 7.3 Window–Panel window, glazed windows (fixed and openable), ventilators, sky light window, Louvres shutters, plastic and aluminum windows
13th (14 November – 19 November)	8. Damp Proofing and Water Proofing	8.1 Dampness and its ill effects sources and causes of dampness 8.2 Damp proofing materials and their specifications: rich concrete and mortar, bitumen, bitumen mastic, polymer coating, use of chemicals
14th (21 November-26 November)	House Test	
15th (28 November – 3 December)	9. Floors	9.1 Glossary of terms-floor finish, topping, under layer, base course, rubble filling and their purpose 9.2 Types of floor finishes - cast-in-situ, concrete flooring (monolithic, bonded) Terrazzo tile flooring, stone (marble and kota) flooring, PVC flooring, Terrazzo flooring, glazed tiles flooring, Timber flooring, description with sketches. The methods of construction of concrete, terrazzo and timber floors
16th (5 December – 9 December)	10. Roofs	10.1 Types of roofs, concept of flat, pitched and arched roofs 10.2 Glossary of terms for pitched roofs - batten, eaves, facia board, gable, hip, lap, purlin, rafter, rag bolt, valley, ridge, rain water gutter, anchoring bolts
17th (12 December – 17 December)	11.Stairs	11.1 Glossary of terms: Staircase, winders, landing, stringer, newel, baluster, riser, tread, width of staircase, hand-rail, nosing 22 11.2 Classification of staircase on the basis of material –RCC, timber, steel, Aluminum 11.3 Planning and layout of staircase: Relations between rise and tread, determination of width of stair, landing etc 11.4 Various types of layout –straight flight, dog legged, open well, quarter turn, half turn (newel and geometrical stairs), bifurcated stair, spiral stair
18th (19 December – 20 December)	12. Surface Finishes	12.1 Plastering - classification according to use and finishes like plain plaster, grit finish, rough cast, pebble dashed, concrete and stone cladding etc., dubbing, proportion of mortars used for different plasters, Procedure of plastering 12.2Painting - preparation of surface, primer coat and application of paints on wooden, steel and plastered wall surfaces (New and old surface). Study of specifications for paints available in market.

NOTE: Lesson Plan is Tentative, subject to availability of Time, Students & Faculty

Signature of Teacher
(Er. Amandeep Singh)

Signature of HOC/OIC
(Er. Amandeep Singh)

Lesson Plan

Name of Faculty	Er. Saibal Bharti
Discipline	Civil Engineering
Semester	3rd
Subject	Building Drawing
Lesson Plan Duration	Sep. 2022 – Dec. 2022

Week	Topics	Description
1st (1 Sep.– 7 Sep)	Drawing No. 1	Details of spread footing foundations, load bearing and non-load bearing wall for given thickness of walls with the help of given data or rule of the thumb, showing offsets, position of DPC.The details of the concrete and brick apron have to be shown in the drawing
2nd (8 Sep.--14 Sep.)	Drawing No. 1	Details of spread footing foundations, load bearing and non-load bearing wall for given thickness of walls with the help of given data or rule of the thumb, showing offsets, position of DPC.The details of the concrete and brick apron have to be shown in the drawing
3rd (15 Sep. – 21 Sep.)	Drawing No. 2	Plans of 'T'and Corner junction of walls of 1 Brick, 1-1/2Brick and 2 brick thick in English bond.
4th (22 Sep. – 28 Sep.)	Drawing No. 2	Plans of 'T'and Corner junction of walls of 1 Brick, 1-1/2Brick and 2 brick thick in English bond.
5th (29 Sep. – 5 Oct.)	Drawing No. 3	Plans of 'T'and Corner junction ofwallsof 1 Brick, 1-1/2Brick and 2 brick thick for Flemish bond.
	Class Test – 1	In Second Week of October 2022.
6th (6 Oct.– 12Oct.)	Drawing No. 3	Plans of 'T'and Corner junction ofwallsof 1 Brick, 1-1/2Brick and 2 brick thick for Flemish bond.
7th (13 Oct. – 19 Oct.)	Drawing No. 4	Elevation, sectional plan and sectional side elevation of flush door (Single Shutter), panelled & glazed door (Double shutter) and window
8th (20 Oct.– 26 Oct.)	Drawing No. 5	Drawing plan, elevation of a one room building from the given site plan, the foundation detail and sectional elevation.
	Class Test – 2	In Second week of November 2022
9th (27 Oct. – 2 Nov.)	Drawing No. 5	Drawing plan, elevation of a one room building from the given site plan, the foundation detail and sectional elevation.
10th (3 Nov.– 9 Nov.)	Drawing No.6	Drawing of detailed plan, elevation and section of a two room residential building from a given line plan, showing details of foundations
11th (10 Nov. – 16 Nov.)	Drawing No.6	Drawing of detailed plan, elevation and section of a two room residential building from a given line plan, showing details of foundations

12th (17 Nov.– 23 Nov.)	Drawing No.7	Planing & Designing of a two room residential building including elevation (No section) fora given plot size.
13th (1 Dec.—7 Dec.)	House Test	In Forth Week of November 2022.
14th (8 Dec.—14 Dec.)	Drawing No.8	Planing & Designing of a two room residential building including elevation (No section) fora given plot size.
15th (15 Dec—20 Dec.)	Revision and Doubt Clearance	Revision and Doubt Clearance

NOTE: Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Saibal Bharti
27/08/22
Signature of Teacher
(Er. Saibal Bharti)

Signature of HOD/OIC
(Er. Amandeep Singh)

LESSON PLAN

Name of Faculty	Rajni Sharma
Department	Civil Engineering
Semester	5th
Subject	B.O.M. & Entrepreneurship Development
Lesson Plan for the Duration	1 September 2022 to 20 December 2022

Week	Theory	
1st	Topics to be covered	Introduction to Management - Defintion,Functions of management
2nd	Topics to be covered	Various areas of management,Structure of an
3rd	Topics to be covered	Self management and development - Life long learning skills,Concept of physical development. Time management
4th	Topics to be covered	Intellectual development, Psychological management. ICT and presentation skills
5th	Topics to be covered	Team management - Concept of team dynamics. Effective group communication
6th	Topics to be covered	Team building, Leadership, Motivation
7th	Topics to be covered	Project Management - Stages of project management. SWOT analysis
8th	Topics to be covered	Introduction to Entrepreneurship - Need and its concept. Qualities
9th	Topics to be covered	Bussiness ownership and its features,Types of Industries
10th	Topics to be covered	Entrepreneureal support System. District Industry centeres. State Financial corporations.NAVARD
11th	Topics to be covered	Micro ,Small,Medium Enterprises -Its objectives and list of schemes
12th	Topics to be covered	Market Study and Opportunity identification - Types of market study. Primary and secondary. Product or service identification. Assessment of demand and supply. Types of survey and their important features
13th	Topics to be covered	Project Report Preparation - Preliminary report
14th	Topics to be covered	Techno economic feasibility report, detailed project report

Signature of HOD

Signature of Teacher

Rajni Sharma

R.G.Government Polytechnic Banikhet,Distt. Chamba H.P-176303

Department of Civil Engineering

Lesson Plan

Name of Faculty	Sh. Abhishek Patial
Discipline	Civil Engineering
Semester	5th
Subject	RCC Design (L-4 Hrs./Week)
Lesson Plan Duration	September – December 2022

Week	Topic	Theory
1st (1 Sept. - 7 Sept.)	1. Introduction to R.C.C Designing using Limit State Method	1.1 Design Philosophies: Working Stress Theory, Ultimate Design Theory, Limit State Theory 1.2 Concept of Reinforced Cement Concrete (RCC) 1.3 Reinforcement Materials: -Suitability of Steel as reinforcing material -Properties of mild steel and HYSD steel
2nd (8 Sept. – 14 Sept.)	1. Introduction to R.C.C Designing using Limit State Method	1.4 Loading on structure as per I.S 875. 1.5 Study of BIS:456-2000 clause5, clause6, clause9, clause18, clause19, clause22, clause 23.0, 23.2, 23.3, Clause25, clause26, clause35, clause36, clause37, clause 38, clause 39, clause 40, clause 41, clause42, clause, 43, Annexure–B, C, D, E, G
3rd (15 Sept. – 21 Sept.)	2. Shear, Bond and Development Length (LSM)	2.1 Nominal Shear stress in R.C. Section, Design shear strength of concrete, maximum shear stress, Design of shear reinforcement, Minimum shear reinforcement, Forms of shear reinforcement. 2.2 Bond and types of bond, Bond Stress, check for bond stress, Development length in tension and compression, anchorage value for hooks 90°bend and 45° bend Standard Lapping of bars, check for development length.
4th (22 Sept. – 28 Sept.)	2. Shear, Bond and Development Length (LSM)	2.3 Simple numerical problems on deciding whether shear reinforcement are required or not, check for adequacy of the section in shear. Design of shear reinforcement; Minimum shear reinforcement in beams; 2.4 Determination of development length required for tension reinforcement of cantilevers beam and s lab, check for development length.
5th (29 Sept. –5 Oct.)	3. Analysis and Design of Singly Reinforced Sections (LSM)	3.1 Limit State of collapse (Flexure), Assumptions stress. Strain relationship for concrete and steel neutral axis, Stress block diagram and Strain diagram for singly reinforced section. 3.2 Concept of under- reinforced, over-reinforced and balanced section, neutral axis co- efficient, limiting value of moment of resistance and limiting percentage of steel required For balanced singly R.C. Section.
Class Test – 1		In Second Week of October 2022.

6th (6 Oct. – 12 Oct.)	3. Analysis and Design of Singly Reinforced Sections (LSM)	3.3 Simple numerical problems on determining design constants, moment of resistance and area of steel. 3.4 Design of Singly reinforced simply supported beam and cantilever beam.
7th (13 Oct. – 19 Oct.)	4. Analysis and Design of Doubly Reinforced Sections (LSM)	4.1 General features, necessity of providing doubly reinforced section reinforcement limitations. 4.2 Analysis of doubly reinforced section, strain diagram stress diagram, depth of neutral axis, moment of resistance of the section.
8th 20 Oct. – 26 Oct.)	4. Analysis and Design of Doubly Reinforced Sections (LSM)	4.3 Numerical problems on finding moment of resistance 4.4 Design of beam sections.
9th (27 Oct. – 2 Nov.)	5. Design of One Way Slab (LSM)	5.1 Analysis & Design of simply supported one-way slab.
10th (3 Nov. – 9 Nov.)	5. Design of One Way Slab (LSM)	5.1 Analysis & Design of simply supported one-way slab.
Class Test – 2		**In Second Week of November 2022.**
11th (10 Nov. – 16 Nov.)	6. Two Way Slab (LSM)	6.1 Design of two-way simply supported slab with corners free & no provision for torsion reinforcement.
12th (17 Nov. – 23 Nov.)	6. Two Way Slab (LSM)	6.1 Design of two-way simply supported slab with corners free & no provision for torsion reinforcement.
House Test		**In Fourth Week of November 2022.**
13th (24 Nov. – 30 Nov.)	7. Design of Axially Loaded Column (LSM)	7.1 Assumptions in limit state of collapse–compression
14th (1 Dec. – 7 Dec.)	7. Design of Axially Loaded Column (LSM)	7.2 Definition and classification of columns, effective length of column. Specification for minimum reinforcement; cover, maximum reinforcement, number of bars in rectangular, square and circular sections, diameter and spacing of lateral ties. 7.3 Analysis and Design of axially loaded: Uniaxial & Biaxial Bending along with axial loading: short, square, rectangular and circular columns with lateral ties only; check for short column and check for minimum eccentricity may be applied.
15th (8 Dec. – 14 Dec.)	8. Design of Staircase (LSM)	8.1 Live load on stair as per IS875:1987 8.2 Effective span of stair 8.3 Design of Stair slab spanning longitudinally 8.4 Design of stair slab spanning horizontally
16th (15 Dec. – 20 Dec.)	Revision and doubt clearance	Revision and doubt clearance.

NOTE: Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Abhishek

Signature of Teacher
(Er. Abhishek Patial)

Signature of HOD/OIC
(Er. Amandeep Singh)

R.G.Government Polytechnic Banikhet,Distt. Chamba H.P-176303

Department of Civil Engineering

Lesson Plan

Name of Faculty	Sh. Abhishek Patial
Discipline	Civil Engineering
Semester	5th
Subject	RCC Drawing & Detailing (P-4 Hrs./Week)
Lesson Plan Duration	September – December 2022

Week	Topic (RCC Drawing)
1st (1 Sept. - 7 Sept.)	Reinforcement details from given data for the Rectangular beams – Singly reinforced with bar bending schedules.
2nd (8 Sept. – 14 Sept.)	Reinforcement details from given data for the Rectangular beams – Singly reinforced with bar bending schedules.
3rd (15 Sept. – 21 Sept.)	Reinforcement details from given data for the Rectangular beams- Doubly reinforced with bar bending schedules.
4th (22 Sept. – 28 Sept.)	Reinforcement details from given data for the Rectangular beams- Doubly reinforced with bar bending schedules.
5th (29 Sept. –5 Oct.)	Reinforcement details from given data for the Cantilever beam – Rectangular and trapezoidal with bar bending schedules.
Class Test – 1	In Second Week of October 2022.
6th (6 Oct. – 12 Oct.)	Reinforcement details from given data for the Cantilever beam – Rectangular and trapezoidal with bar bending schedules.
7th (13 Oct. – 19 Oct.)	Reinforcement details from given data for the One way slab with bar bending schedules.
8th 20 Oct. – 26 Oct.)	Reinforcement details from given data for the One way slab with bar bending schedules.
9th (27 Oct. – 2 Nov.)	Reinforcement details from given data for the Two way slab with bar bending schedules.
10th (3 Nov. – 9 Nov.)	Reinforcement details from given data for the Two way slab with bar bending schedules.
Class Test – 2	In Second Week of November 2022.
11th (10 Nov. – 16 Nov.)	Reinforcement details from given data for the Square columns with isolated footing of uniform depth and varying depth (sloped footings) with bar bending schedules.
12th (17 Nov. – 23 Nov.)	Reinforcement details from given data for the Rectangular columns with isolated footing of uniform depth and varying depth (Sloped footings) with bar bending schedules.
House Test	

	In Fourth Week of November 2022.
13th (24 Nov. – 30 Nov.)	Reinforcement details from given data for the Rectangular columns with isolated footing of uniform depth and varying depth (Sloped footings) with bar bending schedules.
14th (1 Dec. – 7 Dec.)	Reinforcement details from given data for the Circular column with isolated footing of uniform depth and varying depth (sloped footings) with bar bending schedules.
15th (8 Dec. – 14 Dec.)	Reinforcement details from given data for the Dog legged stair Case with bar bending schedules.
16th (15 Dec. – 20 Dec.)	Revision and doubt clearance.

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Abhishek

Signature of Teacher
(Er. Abhishek Patial)

Signature of HOD/OIC
(Er. Amandeep Singh)

Lesson Plan

Name of Faculty	Er. Saibal Bharti
Discipline	Civil Engineering
Semester	5th
Subject	Highway Engineering
Lesson Plan Duration	Sep. 2022 – Dec. 2022

Week	Topics	Description
1st (1 Sep.– 7 Sep)	1. Introduction	1.1 Importance of Highway engineering 1.2 Functions of IRC, CRRI, MORT&H, NHAI 1.3 IRC classification of roads
2nd (8 Sep.--14 Sep.)	2. Highway Alignment & Surveys	2.1 Highway alignment- factors controlling alignment 2.2 Engineering surveys for highway location 2.2.1 Map study 2.2.2 Reconnaissance 2.2.3 Preliminary survey 2.2.4 Final location and detailed survey
3rd (15 Sep. – 21 Sep.)	3. Highway Geometrics	2.3 Drawings and report 3.1 Importance of geometric design 3.2 highway cross section element 3.2.1 Pavement surface characteristic 3.2.2 Cross slope or camber 3.2.3 Width of pavement or carriage way 3.2.4 Kerbs 3.2.5 Road margin 3.2.6 Right of way 3.2.7 Typical Cross Section of roads 3.3 Sight distance (No derivation and numerical) 3.3.1 Introduction 3.3.2 Stopping sight distance (SSD) 3.3.3 Overtaking sight distance (OSD
4th (22 Sep. – 28 Sep.)	3. Highway Geometrics	3.5 Widening of pavement on horizontal curve (No derivation and numerical) 3.5.1 Mechanical widening 3.5.2 Psychological widening 3.6 Horizontal Transition Curves 3.6.1 Object 3.6.2 Different type of transition curves 3.6.3 Paver Blocks 3.7 Gradient 3.7.1 Ruling gradient 3.7.2 Limiting gradient 3.7.3 Exceptional gradient 3.7.4 Minimum gradient 3.8 Vertical curves 3.8.1 Summit curves- types 3.8.2 Valley curves (Note: No design/numerical problem to be taken)
5th (29 Sep. – 5 Oct.)	4. Highway Materials	4.1 Subgrade soil- 4.1.1 Significance 4.1.2 Characteristics of soil 4.1.3 Desirable properties 4.1.4 Index properties of soil 4.1.5 Soil classification based upon size- IS soil classification 4.2 Sub-grade soil strength 4.2.1 CBR test- method and significance
	Class Test – 1	**In Second Week of October 2022.**
6th (6 Oct.– 12Oct.)	4. Highway Materials	4.3 Stone aggregate-Desirable properties of stone aggregate 4.4 Bituminous material 4.4.1 type- i) bitumen- requirements, grades of bituminous, cut back bitumen, bituminous emulsion, modified bituminous ii) Tar 4.4.2 Comparison of bitumen and tar
7th (13 Oct. – 19 Oct.)	5. Highway Pavements	5.1 Object and requirements of pavement 5.2 Type of pavement structure 5.2.1 Flexible pavement- their merits and demerits, typical cross-sections, functions of various Components 5.2.2 Rigid pavement- their merits and demerits, typical cross-sections, functions of various components
8th (20 Oct.– 26 Oct.)	5. Highway Pavements 6. Highway Construction	5.3 Factor to be considered in the design of pavements (Flexible and rigid) 6.1 Type of highway construction 6.2 Earthwork 6.3 Construction of earth road- general, specification of material used, procedure
	Class Test – 2	**In Second week of November 2022**
9th (27 Oct. – 2 Nov.)	6. Highway Construction	6.4 Construction of water bound macadam road- general, specification of material used, Procedure, wet mix macadam 6.5 Construction of bituminous macadam 6.5.1.1 Interface treatment- primecoat,

		tackcoat 6.5.1.2 Bituminous surface dressing 6.5.1.3 Seal Coat 6.5.1.4 Penetration Macadam 6.5.1.5 Built-up spray grout 6.5.1.6 Premix method 6.5.1.7 Bituminous macadam 6.5.1.8 Bituminous premix carpet 6.5.1.9 Bituminous concrete or asphalt concrete 6.5.1.10 Sheet Asphalt 6.5.1.11 Mastic Asphalt 6.5.1.12 Mix seal surfacing 6.5.1.13 Dense bituminous macadam 6.5.2 Construction of surface dressing- specification of material used, construction procedure 6.5.3 Construction of bituminous Macadam-specification of material used, construction Procedure 6.6 Construction of cement concrete pavement slab-specification of material used, construction Procedure 6.7 Paver clock construction
10th (3 Nov.– 9 Nov.)	7. Road Drainage	7.1 Importance of highway drainage-significance, requirement of highway drainage system 7.2 Surface drainage- collection of surface water (No design) 7.3 Cross drainage 7.4 Subsurface drainage- Lowering of water table
11th (10 Nov. – 16 Nov.)	8. Hill Roads	8.1 Classification of hill road 8.2 Alignment of hill road– resisting length, trace cut, hairpin bend, geological consideration (brief description only) 8.3 Alignment survey- Reconnaissance, trace cut, detailed survey 8.4 Geometric of hill roads 8.4.1 Width of pavement, formation and land 8.4.2 Camber or cross fall 8.4.3 Sight distance 8.4.4 Super elevation 8.4.5 Radius of horizontal curve 8.4.6 Widening at curves 8.4.7 Setback distance 8.4.8 Gradient 8.4.9 Hairpin band
12th (17 Nov.– 23 Nov.)	8. Hill Roads 9 Highway Maintenance	8.5 Pavement type 8.6 Drainage in hill roads 8.6.1 Roadside drains 8.6.2 Cross drainage 8.6.3 Subsurface drainage 9.1 Need for highway maintenance 9.2General cause of pavement failure
13th (1 Dec.—7 Dec.)	House Test	**In Forth Week of November 2022.**
14th (8 Dec.—14 Dec.)	9. Highway Maintenance	9.3 Classification of maintenance work 9.4 Typical flexible pavement failure- alligator cracking, pit hole, rutting, loss of aggregate bleeding, deprenions, longitudinal cracking, frost heaving, lack of binding to the lower course, reflection cracking, formation of waves and corrugation, 9.5 Typical rigid pavement failure-scaling of cement concrete, shrinkage cracks, spalling of joints, warping cracks, mud pumping, structural cracks 9.6 Maintenance of earth roads 9.7 Maintenance of W.B.M roads 9.8 Maintenance of bituminous surfaces- patch repair, surface treatment, resurfacing 9.9 Maintenance of cement concrete roads- treatment of cracks, maintenance of joints
15th (15 Dec—20 Dec.)	Revision and Doubt Clearance	Revision and Doubt Clearance

NOTE: Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Saibal Bharti
27/08/22

Signature of Teacher
(Er. Saibal Bharti)

Signature of HOD/OIC
(Er. Amandeep Singh)

R. G. Government Polytechnic Banikhet Distt. Chamba H.P.-176303

Department of Civil Engg.

Lesson Plan

Name of Faculty	Er. Parveen Kumar
Discipline	Civil Engineering
Semester	5th
Subject	Quantity Surveying (L-5 Hrs./week)
Lesson Plan Duration	September – December 2022

Week	Topic	Theory
1st (1 Sept. - 7 Sept.)	1. Introduction	1.1 Meaning of the terms estimating & costing, Purpose of estimating and costing.
2nd (8 Sept. - 14 Sept.)	2. Types of Estimates	2.1 Approximate and Detailed
		2.2 Approximate estimate Types 2.2.1 Plinth area rate method 2.2.2 Cubic Content method 2.2.3 Approximate Quantity method
		2.3 Types of detailed estimate 2.3.1 Detailed estimate for new work 2.3.2 Revised estimate 2.3.3 Supplementary estimate 2.3.4 Repair & Maintenance estimate
3rd (15 Sept. – 21 Sept.)	3. Measurement	3.1 Units of measurement for various items of work as per BIS: 1200
		3.2 Rules for measurements
		3.3 Different methods of taking out quantities–centre line method and long wall and short wall method.
4th (22 Sept. – 28 Sept.)	4. Preparation of Detailed Estimates and Abstract of Cost	4.1 Preparation of Detailed Estimates and Abstract of Cost for One & Two room residential building with flat roof.
5th (29 Sept. – 5 Oct.)	4. Preparation of Detailed Estimates and Abstract of Cost	4.2 Preparation of Detailed Estimates and Abstract of Cost for Septic tank for 10 users.
Class Test – 1		In Second Week of October 2022.
6th (6 Oct. – 12 Oct.)	5. Preparation of Detailed Estimates and Abstract of Cost	5.1 Preparation of Detailed Estimates and Abstract of Cost for Plain road with-mid section area method, mean sectional area method, prismoidal formula.
7th (13 Oct. – 19 Oct.)	5. Preparation of Detailed Estimates and Abstract of Cost	5.2 Preparation of Detailed Estimates and Abstract of Cost for Earth working hill road.
8th (20 Oct. – 26 Oct.)	6. Calculation of Quantities of Materials & Analysis of Rates	6.1 Calculation of quantities 6.1.1 Cement mortars of different proportion 6.1.2 Cement concrete of different proportion 6.1.3 Brick/stonemasonry in cement mortar 6.1.4 Plastering and pointing 6.1.5 Whitewashing, painting
9th (27 Oct. – 2 Nov.)	6. Calculation of Quantities of Materials & Analysis of Rates	6.2 Analysis of rate 6.2.1 Steps involved in the analysis of rates. Requirement of material, labour, sundries, contractor's profit and overheads 6.2.2 Analysis of rates for finished items when data regarding labour , rates of material and labour is given: -Earth working excavation in hard/ordinary soil and filling with a concept of lead and lift -RCC in roof slab/beam/lintels/columns -Brick masonry in cement mortar -Cement Plaster -White washing, painting.
10th (3 Nov. – 9 Nov.)	7. Contractorship	7.1 Meaning of contract
		7.2 Qualities of a good contractor and their qualifications.
		7.3 Essentials of a contract
Class Test – 2		In Second Week of November 2022.
11th (10 Nov. – 16 Nov.)	7. Contractorship	7.4 Types of contracts, their advantages, dis-advantages and suitability, system of payment.
		7.5 Single and two cover-bids; tender, tender form sand documents, tender notice, submission of tender and deposit of earnest money, security deposit, retention money, maintenance period.
12th (17 Nov. – 23 Nov.)	8. Preparation of Tender Document based on Common Schedule Rates (CSR)	8.1 Introduction to CSR and calculation of cost based on premium on CSR (ales test HPSR).
	House Test (Centralized)	In Forth Week of November 2022.
13th (24 Nov. – 30 Nov.)	8. Preparation of Tender Document based on Common Schedule Rates (CSR)	8.2 Exercises on writing detailed specifications of different types of building works from excavation to foundations, superstructure and finishing operation.
14th (1 Dec. – 7 Dec.)	8. Preparation of Tender Document based on Common Schedule Rates (CSR)	8.3 Exercises on preparing tender documents for the following 8.3.1 Earth work 8.3.2 Construction of a Single room building as per given drawing 8.3.3 Publication of notice inviting tender 8.3.4 RCC works 8.3.5 Pointing, plastering and flooring 8.3.6 White-washing, distempering and painting 8.3.7 Wood work including polishing 8.3.8 Tile flooring including base course.

15th (8 Dec. – 14 Dec.)	**9. Exercises on preparation of comparative statements for item rate contract**	Exercises on preparation of comparative statements for item rate contract.
16th (15 Dec. – 20 Dec.)	**Revision & Doubt Clearance**	Revision & Doubt Clearance.

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Signature of Teacher
(Er. Parveen Kumar)

Signature of HOD/OIC
(Er. Amandeep Singh)

Lesson Plan

Name of Faculty	Er. Amandeep Singh
Discipline	Civil Engineering
Semester	5th
Subject	Earthquake Resistant Building Design
Lesson Plan Duration	September 2022 – December 2022

Week	Topics	Description
1st (1 September – 3 September)	1. Elements of Engineering Seismology	1.1 General features of tectonic of seismic regions 1.2 Causes of earthquakes 1.3 Seismic waves 1.4 Earth quake size (magnitude and intensity)
2nd (5 September – 9 September)	1. Elements of Engineering Seismology	1.5 Epicentre 1.6 Seismograph 1.7 Classification of earthquakes 1.8 Seismic zoning map of India
3rd (12 September – 17 September)	2. Seismic Behaviour of Traditionally-Built Constructions of India	2.1 Earth quake effects 2.2 Traditionally built construction in India
4th (19 September – 24 September)	2. Seismic Behaviour of Traditionally-Built Constructions of India	2.3 Performance of building during earthquakes and Mode of failure (Out-of plane failure, inplane failure, Diaphragm failure, Connection failure,
5th (26 September – 30 September)	3. Introduction to IS1893 (Part-I)-2016	3.1 Introduction 3.2 Assumption
6th (3 October - 7 October)	Class Test 1 3. Introduction to IS1893 (Part-I)-2016	3.3 Design lateral forces and their calculation methods
7th (10 October – 15 October)	4. Ductile Detailing of Reinforced Concrete Buildings (IS 13920-2016) & IS 4326-2013	4.1 Common modes of failure in reinforced concrete buildings 4.2 General Principal for earthquake resistant buildings & Special construction features
8th (17 October – 22 October)	4. Ductile Detailing of Reinforced Concrete Buildings (IS 13920-2016) & IS 4326-2013	4.3 Types of irregularities 4.3.1 Vertical irregularities 4.3.2 Plan irregularities
10th (24 October – 29 October)	4. Ductile Detailing of Reinforced Concrete Buildings (IS 13920-2016) & IS 4326-2013	4.4 Ductile detailing as per code 4.5 Seismic strengthening arrangements 4.5.1 Horizontal reinforcement 4.5.2 Vertical reinforcement
11th (1 November – 5 November)	5. Introduction to IS13828-1993 & IS13827-1993	5.1 Advantages and disadvantages of masonry construction 5.2 Behaviour of masonry construction during earthquakes
12th (7 November – 11 November)	Class Test 2 5. Introduction to	5.3 Earthquake resistance features for burnt clay brick in weak mortar

	IS13828-1993 & IS13827-1993	5.4 Codal Provisions for earthquake resistant earthen construction
13th (14 November – 19 November)	5. Introduction to IS13828-1993 & IS13827-1993	5.5 Seismic strengthening features of earthen buildings
14th (21 November-26 November)	House Test	
15th (28 November – 3 December)	6. Retrofitting Measure for Traditionally Built Construction	6.1 Introduction, need of retrofitting 6.2 Retrofitting materials
16th (5 December – 9 December)	6. Retrofitting Measure for Traditionally Built Construction	6.3 Retrofitting measure of traditionally built construction 6.3.1 Retrofitting of masonry buildings 6.3.2 Retrofitting of concrete structure 6.3.3 Retrofitting of low-cost buildings
17th (12 December – 17 December)	7. Disaster Management	7.1 Disaster rescue 7.2 Psychology of rescue, rescue workers, rescue plan, rescue by steps, rescue equipment 7.3 Safeties in rescue operations
18th (19 December – 20 December)	7. Disaster Management	7.4 Debris clearance 7.5 Causality management

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Signature of Teacher

(Er. Amandeep Singh)

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