

Government Polytechnic Lahaul Spiti at Udaipur Camp at Sundernagar Distt Mandi (H.P.) 175018

Department of Civil Engineering

Diary No 133F (A)
03/08/26

Lesson Plan for Construction Material (Semester-3rd) Session: (August-November 2026)

S.No.	MONTH	WEEK	Date	CONTENTS	DA	REMARKS
1	August	Week 2	3,5,6	Scope of construction materials in Building Construction,		
		Week 3	10,12,13	Scope of construction materials in Transportation Engineering, Environmental Engineering, Irrigation Engineering (applications only).		
		Week 4	17,19,20	Selection of materials for different civil engineering structures based on strength, durability, Eco friendly and economy.		
		Week 5	24,26,27	Broad classification of materials – Natural, Artificial, special, finishing and recycled.		
		Week 6	31	Natural Construction Materials Requirements of good building stone; general characteristics of stone;		
2	September	Week 1	2,3	Quarrying addressing methods and tools for stone. Structure of timber,		
		Week 2	7,9,10	different methods of seasoning for preservation of timber, defects in timber, use of bamboo in construction.		Class Test-I
		Week 3	14,16,17	general properties and uses of good timber, Asphalt, bitumen, and tar used in construction, properties and uses.		
		Week 4	21,23,24	Properties of lime, its types and uses. Types of soil and its suitability in construction. Properties of sand and uses		
		Week 5	28,30	Classification of coarse aggregate according to size		
3	October	Week 1	1	Artificial Construction Materials Constituents of brick earth, Conventional / Traditional bricks, Modular and Standard bricks, Special bricks		
		Week 2	5,7,8	Manufacturing process of burnt clay brick, fly ash bricks, Aerated concrete blocks. Flooring tiles – Types, uses Manufacturing process of Cement - dry and wet (only flow chart), types of cement and its uses.		Class Test-II
		Week 3	12,14,15	Field tests on cement. Classification of coarse aggregate according to size		

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		Week 4	19,21,22	Artificial Construction Materials –fly ash bricks, Characteristics of good brick, Field tests on Bricks,	
		Week 5	28,29	Classification of burnt clay bricks and their suitability, Special Construction Materials Types of material and suitability in construction works of following materials: Water proofing, Termite proofing Thermal and sound insulating materials.	
4	November	Week 1	2,3	House Test	
		Week 2	9,11,12	Fibers – Types –Jute, Glass, Plastic Asbestos Fibers, (only uses)Geo polymer cement:	
		Week 3	16,18,20	Geo-cement: properties, uses Processed Construction Materials Processed Construction Material Constituents and uses of POP (Plaster of Paris), POP finishing boards, sizes, and uses.Paints- whitewash, cement paint, Distempers,	
		Week 4	23,25,26	Oil Paints and Varnishes with their uses. (Situations where used) Agro waste materials - Rice husk, Bagasse, coir fibers and their uses. Special processed construction materials; Geo synthetic, Ferro Crete,Artificial timber, Artificial sand, and their uses	



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Department of Civil Engineering

Lesson Plan for Basic Surveying (Semester-3rd) Session: (August-November 2026)

S.No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	August	Week 1	1	Survey- Purpose and Use.Types of surveying- Primary and Secondary. Classification: Plane, Geodetic, Cadastral,	
		Week 2	4,6	Hydrographic, Photogrammetry and Aerial.Principles of Surveying.Scales: Engineer's scale, Representative Fraction (RF) and diagonal scale.	
		Week 3	11,13	Chain Surveying:Instruments used in chain survey: Metric Chain, Tapes, Arrow, ranging rod, Line ranger, Offset rod,	
		Week 4	18,20,22	Open cross staff, Optical square., Chain survey Station, Base line, Check line, Tie line,	
		Week 5	25,27,29	Offset, Tie station. Ranging: Direct and Indirect Ranging. Methods of Chaining, obstacles in chaining.	
2	September	Week 1	1,3,5,	Errors in length: Instrumental error, personal error, error due to natural cause, random error.	Class Test-I
		Week 2	8,10	Principles of triangulation.Types of offsets: Perpendicular and Oblique. Conventional Signs, Recording of measurements in a field book	
		Week 3	15,17,19	Compass Traversing- open, closed.Technical Terms: Geographic/ True Magnetic Meridians and Bearings,	
		Week 4	22,24,26	Whole Circle Bearing system and Reduced Bearing system and examples on conversion of given bearing to another bearing (from one form to another), Fore Bearing and Back Bearing,	
		Week 5	29	Calculation of internal and external angles from bearings at a station, Dip of Magnetic needle, Magnetic Declination. Components of Prismatic Compass and their Functions,	
3	October	Week 1	1,3	Methods of using Prismatic Compass-Temporary adjustments and observing bearings. Local attraction,	Class Test-II
		Week 2	6,8	Methods of correction of observed bearings - Correction at station and correction to included angles,	
		Week 3	13,15,17	Basic terminologies: Level surfaces, Horizontal and vertical surfaces, Datum, Benchmarks- GTS,Permanent, Arbitrary and Temporary, Reduced Leve	

		Week 4	22,24	Rise, Fall, Line of collimation, Station, Back sight, Fore sight, Intermediate sight, Change point,
		Week 5	27,29,31,	Height of instruments. Types of levels: Dumpy, Tilting, Auto level, Digital level, Components of Dumpy Level and its fundamental axes, Temporary adjustments of Level.
4	November	Week 1	3,5,7	House Test
		Week 2	10,12	Types of Levelling Staff: Self-reading staff and Target staff. Reduction of level by Line of collimation and Rise and Fall Method. Levelling Types: Simple, Differential, Fly, Profile and Reciprocal Levelling.
		Week 3	17,19,21,	Contour, contour intervals, horizontal equivalent., Uses of contour maps, Characteristics of contours, Methods of Contouring: Direct and indirect, Components and use of Digital planimeter.
		Week 4	26,28	Measurement of area using digital planimeter. Measurement of volume of reservoir from contour map



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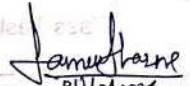
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Department of Civil Engineering

Lesson Plan for Mechanics of Materials (Semester-3rd) Session: (August-November 2026)

S.No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	Aug	Week 2	6,7	Introduction, Overview of syllabus, Evaluation scheme	
		Week 3	10,11,13,14	Moment of inertia (M.I.): Definition, M.I. of plane lamina, Radius of gyration, section modulus, Parallel and Perpendicular axes theorems (without derivations), M.I. of rectangle, square, circle, semi-circle, quarter circle and triangle section (without derivations).	
		Week 4	17,18,20,21,	M.I. of symmetrical and unsymmetrical I-section, Channel section, T-section, Angle section, Hollow sections about centroidal axes. Polar Moment of Inertia of solid circular sections. Numerical Practice	
		Week 5	24,25,27,28	Simple Stresses and Strains : Definition of rigid, elastic and plastic bodies, Definition of stress, strain, elasticity, Hook's law, Elastic limit, Modulus of elasticity. Type of Stresses-Normal, Direct, Bending and Shear and nature of stresses i.e., Tensile and Compressive stresses. Standard stress strain curve for tor steel bar under tension, Yield stress, Proof stress, Ultimate stress, Strain at various critical points, Percentage elongation and Factor of safety	
2	Sept	Week 1	1,3	Deformation of body due to axial force, forces applied at intermediate sections, Maximum and minimum stress induced, Composite section under axial loading.	Class Test-I
		Week 2	7,8,10,11	Concept of temperature stresses and strain, Stress and strain developed due to temperature variation in homogeneous simple bar (no composite section) Longitudinal and lateral strain, Numerical Practice	
		Week 3	14,15,17,18	Modulus of Rigidity, Poisson's ratio, volumetric strain, change in volume, Bulk modulus (Introduction only). Relation between modulus of elasticity, modulus of rigidity and bulk modulus (without derivation). Numerical Practice	
		Week 4	21,22,24,25	Shear Force and Bending Moment: Types of supports, beams, and loads. Concept and definition of shear force and bending moment	
		Week 5	28,29	Relation between load, shear force and bending moment (without derivation). Numerical Practice	
3	Oct	Week 1	1	Relation between load, shear force and bending moment (without derivation). Numerical Practice	

3	Oct	Week 2	5,6,8,9	Bending and Shear Stresses in beams: Concept and theory of pure bending, assumptions, flexural equation (without derivation), bending stresses and their nature, bending stress distribution diagram. Concept of moment of resistance and simple numerical problems using flexural equation	Class Test-I
		Week 3	12,13,15,16	Shear stress equation (without derivation), relation between maximum and average shear stress for rectangular and circular section, shear stress distribution diagram. .	
		Week 4	19,22,23	Shear stress distribution for square, rectangular, circle, hollow, angle sections, channel section, I-section, T section. Simple numerical problems based on shear equation	
		Week 5	27,29,30	Columns: Concept of compression member, short and long column, Effective length, Radius of gyration, Slenderness ratio, Types of end condition for columns, Buckling of axially loaded columns.	
4	Nov	Week 1	2,3,5,6	HOUSE TEST	
		Week 2	9,10,12,13	Euler's theory, assumptions made in Euler's theory and its limitations, Application of Euler's equation to calculate buckling load. Rankine's formula and its application to calculate crippling load.	
		Week 3	16,17,19,20	Concept of working load/safe load, design load and factor of safety.	
		Week 4	23,26,27	Numerical Practice and Revision	


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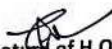
Department of Civil Engineering

Lesson Plan for Building Construction (Semester-3rd) Session: (August-November 2026)

S.No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	August	Week 2	5,6,7	Classification of Buildings as per National Building Code Group A to I, as per Types of Constructions Load Bearing Structure, Framed Structure, Composite Structure.	
		Week 3	12,13,14	Building Components - Functions of Building Components, Substructure – Foundation, Plinth. & Superstructure – Walls, Partition wall, Cavity wall, Sill, Lintel, Doors and Windows, Floor, Roof, Columns, Beams, Parapet.	
		Week 4	19,20,21	Job Layout: Site Clearance, Layout for Load Bearing Structure and Framed Structure by Center Line and Face Line Method, Precautions.	
		Week 5	26,27,28	Earthwork: Excavation for Foundation, Timbering and Strutting, Earthwork for embankment, Material for plinth Filling, Tools and plants used for earthwork.	
2	September	Week 1	2,3	Foundation: Functions of foundation, Types of foundation – Shallow Foundation, Stepped Footing, Wall Footing, Column Footing, Isolated and Combined Column Footing, Raft Foundation, Grillage Foundation. Deep Foundation - Pile Foundation, Well foundation.	Class Test-I
		Week 2	9,10,11	Stone Masonry: Terms used in stone masonry- facing, backing, hearting, through stone, corner stone, cornice. Types of stone masonry: Rubble masonry, Ashlar Masonry, and their types. Joints in stone masonry and their purpose. Selection of Stone Masonry, Precautions to be taken in Stone Masonry Construction.	
		Week 3	16,17,18	Brick masonry: Terms used in brick masonry- header, stretcher, closer, quoins, course, face, back, hearting, bat bond, joints, lap, frog line, level and plumb. Bonds in brick masonry- header bond, stretcher bond, English bond and Flemish bond. Requirements of good brick masonry. Junctions in brick masonry and their purpose and procedure.	
		Week 4	23,24,25	Precautions to be observed in Brick Masonry Construction. Comparison between stone and Brick Masonry. Tools and plants required for construction of stone and brick masonry. Hollow concrete block masonry and composite masonry.	
		Week 5	30	Scaffolding and Shoring: Purpose, Types of Scaffolding, Process of Erection and Dismantling. Purpose and Types of Shoring, Underpinning. Formwork: Definition of Formwork, Requirements of Formwork, Materials used in Formwork, Types of Formworks, Removal of formwork.	

3	October	Week 1	1	Horizontal Communication: Doors – Horizontal Communication: Doors – Components of Doors, Full Panelled Doors, Partly Panelled and Glazed Doors, Flush Doors, Collapsible Doors, Rolling Shutters, 13 Revolving Doors, Glazed Doors. Sizes of Door recommended by BIS	Class Test-II
		Week 2	7,8,9	Windows: Component of windows, Types of Windows - Full Panelled, Partly Panelled and Glazed, wooden, Steel, Aluminium windows, Sliding Windows, Louvered Window, Bay window, Corner window, clear-storey window, Gable and Dormer window, Skylight. Sizes of Windows recommended by BIS. Ventilator	
		Week 3	14,15,16	Vertical Communication: Means of Vertical Communication- Stair Case, Terms used in staircase-steps, tread, riser, nosing, soffit, waist slab, baluster, balustrade, scotia, handrails, newel post, landing, headroom, winder.	
		Week 4	21,22,23	Types of staircases (On the basis of shape): Straight, dog-legged, open well, Spiral, quarter turn, bifurcated, three quarter turn and Half turn, (On the basis of Material): Stone, Brick, R.C.C., wooden and Metal	
		Week 5	28,29,30	Floors and Roofs: Types of Floor Finishes and its suitability- Kota, Marble, Granite, Ceramic Tiles, Vitrified, Concrete Floors, wooden Flooring, Skirting and Dado. Process of Laying and Construction, Finishing and Polishing of Floors	
4	November	Week 1	4,5,6	House Test	
		Week 2	11,12,13	Roofing Materials- RCC, Mangalore Tiles, AC Sheets, G.I. sheets, Corrugated G.I. Sheets, Plastic and Fibre Sheets. Types of Roofs: Flat roof, Pitched Roof-King Post truss, Queen Post Truss, terms used in roofs.	
		Week 3	18,19,20	Wall Finishes: Plastering – Necessity of Plastering, Procedure of Plastering, Single Coat Plaster, Double Coat Plaster, Rough finish, Neeru Finishing and Plaster of Paris (POP). Special Plasters- Stucco plaster, sponge finish, pebble finish.	
		Week 4	25,26,27	Plaster. Precautions to be taken in plastering, defects in plastering. Pointing – Necessity, Types of pointing and procedure of Pointing. Painting –Necessity, Surface Preparation for painting, Methods of Application.	


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LESSON PLAN FOR Concrete Technology (SEMESTER-3rd)SESSION: (Aug-Dec 2026)

5.	MONTH	WEEK	CONTENTS	REMARKS
1	August	Week 1		
		Week 2	Unit – I Cement, Aggregates and Water :Physical properties of OPC and PPC: fineness, standard consistency, setting time,soundness, compressive strength. Different grades of OPC and relevant BIS codes	
		Week 3	Storage of cement and effect of storage on properties of cement. BIS Specifications and field applications of different types of cements: Rapid hardening, Low heat, Portland pozzolana, Sulphate resisting, Blast furnace slag, High Alumina and Whitecement. Aggregates: Requirements of good aggregate, Classification according to size and shape.	
		Week 4	Fine aggregates: Properties, size, specific gravity, bulk density, water absorption and bulking, fineness modulus and grading zone of sand, silt content and their specification as per IS 383. Concept of crushed Sand. Coarse aggregates: Properties, size, shape, surface texture, water absorption, soundness,	
		Week 5	specific gravity and bulk density, fineness modulus of coarse aggregate, grading of coarse aggregates, crushing value, impact value and abrasion value of coarse aggregates with specifications. Water: Quality of water, impurities in mixing water and permissible limits for solids as per IS: 456.	
2	September	Week 1	Unit– II Concrete Concrete: Different grades of concrete, provisions of IS 456. Duff Abraham water cement (w/c) ratio law, significance of w/c ratio, selection of w/c ratio for different grades,	
		Week 2	maximum w/c ratio for different grades of concrete for different exposure conditions as per IS 456. Class Test -1 Will be held this week.	
		Week 3	Properties of fresh concrete: Workability: Factors affecting workability of concrete. Determination of workability of concrete by slump cone, compaction factor, Vee-Bee Consistometer.	
		Week 4	Value of workability requirement for different types of concrete works. Segregation, bleeding, and preventive measures. Properties of Hardened concrete: Strength, Durability, Impermeability	
		Week 5	Unit– III Concrete Mix Design and Testing of Concrete : Concrete mix design: Objectives, methods of mix design, study of mix design as per IS 10262 (only procedural steps). Testing of concrete, determination of compressive strength of concrete cubes at different ages.	

3	October	Week 1	Interpretation, and co-relation of test results. Non- destructive testing of concrete: Rebound hammer test, working principle of rebound hammer and factor affecting the rebound index, Ultrasonic pulse velocity test as per IS 13311 (part 1 and 2), Importance of NDT tests.	
		Week 2	Unit- IV Quality Control of Concrete Concreting Operations: Batching, Mixing, Transportation, Placing, Compaction, Curing and Finishing of concrete. Forms for concreting: Different types of form works for beams, slabs, columns, materials used for form work, requirement of good form work. Class Test - 2 Will be held this week.	
		Week 3	Stripping time for removal of form works per IS 456. Waterproofing: Importance and need of waterproofing, methods of waterproofing and materials used for waterproofing.	
		Week 4	Joints in concrete construction: Types of joints, methods for joining old and new concrete, materials used for filling joints. Unit- V Chemical Admixture, Special Concrete and Extreme Weather concreting Admixtures in concrete: Purpose, properties and application for different types of admixtures such as accelerating admixtures,	
		Week 5	retarding admixtures, water reducing admixtures, air entraining admixtures and super plasticizers. Special Concrete: Properties, advantages and limitation of following types of Special concrete: Ready mix Concrete, Fibre Reinforced Concrete, High performance Concrete Self-compacting concrete and light weight concrete.	
4	November	Week 1	House Test will be held this week	
		Week 2	Cold weather concreting: effect of cold weather on concrete, precautions to be taken while concreting in cold weather condition.	
		Week 3	Hot weather concreting: effect of hot weather on concrete, precautions to be taken while concreting in hot weather condition.	
		Week 4	Revision of Previous Year Question Papers	


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LESSON PLAN FOR Geotechnical Engineering (SEMESTER-3rd)SESSION: (Aug-Dec 2026)

S.No.	MONTH	WEEK	CONTENTS	REMARKS
	August	Week 2	Unit – I Overview of Geology and Geotechnical Engineering: Introduction of Geology, Branches of Geology, Importance of Geology for civil engineering structure and composition of earth, Definition of a rock: Classification based on their genesis (mode of origin), formation	
		Week 3	Classification, and engineering uses of Igneous, sedimentary, and metamorphic rocks. Importance of soil as construction material in Civil engineering structures and as foundation bed for structures	
		Week 4	Field application of geotechnical engineering for foundation design, pavement design, design of earth retaining structures, design of earthen dam.	
		Week 5	Unit– II Physical and Index Properties of Soil: Soil as a three-phase system, water content, determination of water content by oven drying method as per BIS code, void ratio, porosity and degree of saturation, density index. Unit weight of soil mass – bulk unit weight, dry unit weight, unit weight of solids, saturated unit weight, submerged unit weight	
		Week 1	Determination of bulk unit weight and dry unit weight by core cutter and sand replacement method, Consistency of soil, Atterberg limits of consistency: Liquid limit, plastic limit and shrinkage limit. Plasticity index. Particle size distribution test and plotting of curve, Determination of effective diameter of soil, well graded and uniformly graded soils, BIS classification of soil.	
2	September	Week 2	Unit– III Permeability and Shear Strength of Soil Definition of permeability, Darcy's law of permeability, coefficient of permeability, factors affecting permeability, determination of coefficient of permeability by constant head and falling head tests, simple problems to determine coefficient of permeability. Class Test -1 Will be held this week.	
		Week 3	Seepage through earthen structures, seepage velocity, seepage pressure, phreatic line, flow lines, application of flow net, (No numerical problems). Shear failure of soil, concept of shear strength of soil	
		Week 4	Components of shearing resistance of soil – cohesion, internal friction. Mohr-Coulomb failure theory, Strength envelope, strength equation for purely cohesive and cohesion less soils. Direct shear and vane shear test – laboratory methods.	
		Week 5	Unit– IV Bearing Capacity of Soil Bearing capacity and theory of earth pressure. Concept of bearing capacity, ultimate bearing capacity, safe bearing capacity and allowable bearing pressure. Introduction to Terzaghi's analysis and assumptions, effect of water table on bearing capacity.	

3	October	Week 1	Field methods for determination of bearing capacity – Plate load and Standard Penetration Test. Test procedures as per IS:1888 & IS:2131.	
		Week 2	Definition of earth pressure, Active and Passive earth pressure for no surcharge condition, coefficient of earth pressure Test procedures as per IS:1888 & IS:2131. Definition of earth pressure, Active and Passive earth pressure for no surcharge condition, coefficient of earth pressure Class Test -2 Will be held this week.	
		Week 3	Unit- V Compaction and stabilization of soil Concept of compaction, Standard and Modified proctor test as per IS code, Plotting of Compaction curve for determining: Optimum moisture content (OMC), maximum dry density (MDD), Zero air voids line. Factors affecting compaction	
		Week 4	field methods of compaction – rolling, ramming and vibration. Suitability of various compaction equipment -smooth wheel roller, sheep foot roller, pneumatic tyre roller, Rammer and Vibrator, Difference between compaction and consolidation	
		Week 5	Concept of soil stabilization, necessity of soil stabilization, different methods of soil stabilization. California bearing ratio (CBR) test - Meaning and Utilization in Pavement Construction	
4	November	Week 1	House Test will be held this week	
		Week 2	Necessity of site investigation and soil exploration: Types of exploration, criteria for deciding the location and number of test pits and bores Field identification of soil – dry strength test, dilatancy test and toughness test.	
		Week 3	Revision	
		Week 4	Revision	


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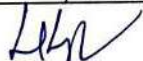
Lesson Plan for Construction Material G-I (Semester-3rd) Session: (August-November 2026)

S.N	MONTH	WEEK	Date	CONTENTS	REMARKS
1	August	Week 2	6	Identify various sizes of available coarse aggregates from sample of 10 kg in laboratory and prepare report (60,40, 20,10 mm)	
		Week 3	13	Identify the available construction materials in the laboratory based on their sources.	
		Week 4	20	Identify the grain distribution pattern in given sample of teak wood in the laboratory and draw the various patterns. (Along and perpendicular to the grains)	
		Week 5	27	Prepare the lime putty by mixing lime (1 kg) with water in appropriate proportion and pre-prepare report on slaking of lime.	
2	September	Week 1	3	Identify various layers and types of soil in foundation pit by visiting at least 3 construction sites in different locations of city and prepare report consisting of photographs and samples. Part I	Class Test-I
		Week 2	10	Identify various layers and types of soil in foundation pit by visiting at least 3 construction sites in different locations of city and prepare report consisting of photographs and samples. Part II	
		Week 3	17	Select first class, second class and third-class bricks from the stake of bricks and prepare report on the basis of its properties.	
		Week 4	24	Measure dimensions of 10 bricks and find average dimension and weight. Perform field tests- dropping, striking, and scratching by nail and correlate the results obtained.	
3	October	Week 1	1	Identify different types of flooring tiles such as vitrified tiles, ceramic tiles, glazed tiles, mosaic tiles, antiskid tiles, checkered tiles, paving blocks and prepare report about the specifications.	Class Test-II
		Week 2	8	Apply the relevant termite chemical on given damaged sample of timber.	
		Week 3	15	Identify the type of glasses from the given samples.	
		Week 4	22	Apply two or more coats of selected paint on the prepared base of a given wall surface for the area of 1m x 1m using suitable brush/rollers adopting safe practices. Part I	
		Week 5	29	Apply two or more coats of selected paint on the prepared base of a given wall surface for the area of 1m x 1m using suitable brush/rollers adopting safe practices. Part II	
4	November	Week 1	5	House test	
		Week 2	12	Prepare the cement mortar of proportion 1:3 or 1:6 using artificial sand as a special processed construction material.	
		Week 3	19	Prepare mortar using cement and Fly ash or Granite/marble polishing waste in the	
		Week 4	26	Checking of files and viva	

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S.N	MONTH	WEEK	Date	CONTENTS	REMARKS
1	August	Week 1	3	Identify various sizes of available coarse aggregates from sample of 10 kg in laboratory and prepare report (60,40, 20,10 mm)	
		Week 3	10	Identify the available construction materials in the laboratory based on their sources.	
		Week 4	17	Identify the grain distribution pattern in given sample of teak wood in the laboratory and draw the various patterns. (Along and perpendicular to the grains)	
		Week 5	24	Prepare the lime putty by mixing lime (1 kg) with water in appropriate proportion and pre-prepare report on slaking of lime.	
		Week 6	31	Identify various layers and types of soil in foundation pit by visiting at least 3 construction sites in different locations of city and prepare report consisting of photographs and samples.	
2	September	Week 2	7	Identify various layers and types of soil in foundation pit by visiting at least 3 construction sites in different locations of city and prepare report consisting of photographs and samples.	Class Test-I
		Week 3	14	Select first class, second class and third-class bricks from the stake of bricks and prepare report on the basis of its properties.	
		Week 4	21	Measure dimensions of 10 bricks and find average dimension and weight. Perform field tests- dropping, striking, and scratching by nail and correlate the results obtained.	
		Week 5	28	Identify different types of flooring tiles such as vitrified tiles, ceramic tiles, glazed tiles, mosaic tiles, antiskid tiles, checkered tiles, paving blocks and prepare report about the specifications.	
3	October	Week 2	5	Apply the relevant termite chemical on given damaged sample of timber.	Class Test-II
		Week 3	12	Identify the type of glasses from the given samples.	
		Week 4	19	Apply two or more coats of selected paint on the prepared base of a given wall surface for the area of 1m x 1m using suitable brush/rollers adopting safe practices. Part I	
		Week 5	28	Apply two or more coats of selected paint on the prepared base of a given wall surface for the area of 1m x 1m using suitable brush/rollers adopting safe practices. Part II	
				House Test	
4	November	Week 1	2		
		Week 2	9	Prepare the cement mortar of proportion 1:3 or 1:6 using artificial sand as a special processed construction material.	
		Week 3	16	Prepare mortar using cement and Fly ash or Granite/marble polishing waste in the	
		Week 4	23	Checking of files and viva	


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(Dr. Anurag Mehl)

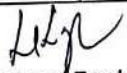

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Department of Civil Engineering

Lesson Plan for Basic Surveying Lab G-I (Semester-3rd) Session: (August-November 2026)

S.N	MONTH	WEEK	Date	CONTENTS	REMARKS
		Week 1	1	1. Measure distance between two survey stations using chain, tape and ranging rods when two stations are inter-visible.	
		Week 3	11	Checking of files and viva	
		Week 4	18,22	3. Determine area of open field using chain and cross staff survey.	
		Week 5	25,29	4. Measure Fore Bearing and Back Bearing of survey lines of open traverse using Prismatic Compass.	
		Week 1	1,5	5. Measure Fore Bearing and back bearing of a closed traverse of 5 or 6 sides and correct the bearings and included angles for the local attraction.	
		Week 2	8	6. Undertake Survey Project with chain and compass for closed traverse for minimum 5 sides around a building.	Class Test-I
2	September	Week 3	15,19	7. Plot the traverse on A1 size imperial drawing sheet for data collected in Survey Project mentioned at practical No.6.	
		Week 4	22,26	Checking of files and viva	
		Week 5	29	8. Undertake simple levelling using dumpy level/ Auto level and levelling staff.	
		Week 1	3	9. Undertake differential levelling and determine Reduced Levels by Height of instrument method and Rise and fall method using dumpy level/Auto Level and	
		Week 2	6	10. Undertake fly levelling with double check using dumpy level/ Auto level and levelling staff.	Class Test-II
3	October	Week 3	13,17	11. Undertake Survey Project with Levelling instrument for Profile levelling and cross- sectioning for a road with cross-section.	
		Week 4	24	12. Plot the L-section with minimum 3 cross-sections on A1 size imperial sheet for data collected in Survey Project mentioned at practical No.11	
		Week 5	27,31	13. Undertake Survey Project for plotting contour map using block contouring method for a block of 150m x 150m with grid of 10mx10m.	
		Week 1	3,7	House test	
4	November	Week 2	10	14. Plot the contours on A1 size imperial drawing sheet for data collected in Survey	
		Week 3	17,21,	15. Measure area of irregular figure using Digital planimeter.	
		Week 4	28	Checking of files and viva	


Signature of Teacher
(Er Nawang Negi)

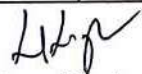

Signature of H.O.D
(Dr. Lalit Goel)

Government Polytechnic Lahaul Spiti at Udalpur Camp at Sundernagar Distt Mandi (H.P) -175018

Department of Civil Engineering

Lesson Plan for Basic Surveying Lab G-II (Semester-3rd) Session: (August-November 2026)

S.N	MONTH	WEEK	Date	CONTENTS	REMARKS
		Week 1	1	1. Measure distance between two survey stations using chain, tape and ranging rods when two stations are inter-visible.	
1	August	Week 2	5	2. Undertake reciprocal ranging and measure the distance between two stations.	
		Week 3	12	Checking of files and viva	
		Week 4	19,22	3. Determine area of open field using chain and cross staff survey.	
		Week 5	26,29	4. Measure Fore Bearing and Back Bearing of survey lines of open traverse using Prismatic	
2	September	Week 1	2,5	5. Measure Fore Bearing and back bearing of a closed traverse of 5 or 6 sides and correct the bearings and included angles for the local attraction.	Class Test-I
		Week 2	9	6. Undertake Survey Project with chain and compass for closed traverse for minimum 5 sides around a building.	
		Week 3	16,19	7. Plot the traverse on A1 size imperial drawing sheet for data collected in Survey Project mentioned at practical No.6.	
		Week 4	23,26	Checking of files and viva	
		Week 5	30	8. Undertake simple levelling using dumpy level/ Auto level and levelling staff.	
3	October	Week 1	3	9. Undertake differential levelling and determine Reduced Levels by Height of instrument method and Rise and fall method using dumpy level/Auto Level and levelling staff.	
		Week 2	7	10. Undertake fly levelling with double check using dumpy level/ Auto level and levelling staff.	Class Test-II
		Week 3	14,17	11. Undertake Survey Project with Levelling instrument for Profile levelling and cross- sectioning for a road with cross-section.	
		Week 4	21,24	12. Plot the L-section with minimum 3 cross-sections on A1 size imperial sheet for data collected in Survey Project mentioned at practical No.11	
		Week 5	28,31	13. Undertake Survey Project for plotting contour map using block contouring method for a block of 150m x 150m with grid of 10mx10m.	
4	November	Week 1	4,7	House test	
		Week 2	11	14. Plot the contours on A1 size imperial drawing sheet for data collected in Survey Project mentioned at practical No.13.	
		Week 3	18,21	15. Measure area of irregular figure using Digital planimeter.	
		Week 4	25,28	Checking of files and viva	


Signature of Teacher
(Er Nawang Negi)


Signature of H.O.D
(Dr. Lalit Goel)

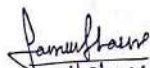
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Department of Civil Engineering

Lesson Plan for Mechanics of Materials Lab (Semester-3rd) Session: (August-November 2026)

No.	MONTH	WEEK	Group	Date	CONTENTS	REMARKS
1	August	Week 2	1	5	Introduction to Mechanics of Materials lab and Evaluation scheme	
			2	7	Introduction to Mechanics of Materials lab and Evaluation scheme	
		Week 3	1	12	Study and understand the use and components of Universal Testing Machine (UTM).	
			2	14	Study and understand the use and components of Universal Testing Machine (UTM).	
		Week 4	1	19	Perform Tension test on mild steel as per IS:432(1).	
			2	20	Perform Tension test on mild steel as per IS:432(1).	
		Week 5	1	26	Viva Voce	
			2	28	Perform tension test on Tor steel as per IS:1608, IS:1139.	
2	September	Week 1	1	2	Perform tension test on Tor steel as per IS:1608, IS:1139.	
		Week 2	1	9	Determine Water Absorption on bricks per IS:3495 (part II), IS:1077 or tile IS:1237.	
			2	11	Determine Water Absorption on bricks per IS:3495 (part II), IS:1077 or tile IS:1237.	
		Week 3	1	16	Determine Compressive strength of dry and wet bricks as per IS:3495(part I), IS:1077.	
			2	18	Viva Voce	
		Week 4	1	23	Viva Voce	
			2	25	Determine Compressive strength of dry and wet bricks as per IS:3495(part I), IS:1077.	
		Week 5	1	30	Perform Single Shear and double shear test on any two metals e.g., Mild steel/ brass/aluminium/copper / cast iron etc as per IS:5242.	
3	October	Week 2	1	7	Plot Shear force and Bending Moment diagrams for simply supported beams.	
			2	9	Perform Single Shear and double shear test on any two metals e.g., Mild steel/ brass/aluminium/copper / cast iron etc as per IS:5242.	

3	October	Week 3	1	14	Viva Voce
			2	16	Plot Shear force and Bending Moment diagrams for simply supported beams.
		Week 4	1	21	Conduct Flexural test on timber beam on rectangular section in both orientations as per IS:1708, IS:2408.
			2	23	Conduct Flexural test on timber beam on rectangular section in both orientations as per IS:1708, IS:2408.
		Week 5	1	28	Conduct Flexure test on floor tiles IS:1237, IS:13630 or roofing tiles as per IS:654, IS:2690.
			2	30	Conduct Flexure test on floor tiles IS:1237, IS:13630 or roofing tiles as per IS:654, IS:2690.
4	November	Week 1	1,2	4,6	HOUSE TEST
		Week 2	1	11	Conduct Abrasion Test on flooring tiles (anyone) e.g., Mosaic tiles, Ceramic Tiles as per IS: 13630 (part7), Cement Tile as per IS: 1237.
			2	13	Conduct Abrasion Test on flooring tiles (anyone) e.g., Mosaic tiles, Ceramic Tiles as per IS: 13630 (part7), Cement Tile as per IS: 1237.
		Week 3	1	18	Viva Voce
			2	20	Viva Voce
		Week 4	1	25	Revision
			2	27	Revision


 01/11/2026
 Signature of Teacher
 (Er Sameer Sharma)


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 (Dr. Lalit Goel)

Department of Civil Engineering
Government Polytechnic L&S at Udaipur Camp at Sundernagar Distt Mandi (H.P) -175018

LESSON PLAN FOR Concrete Technology Lab (SEMESTER-3rd)SESSION: (Aug-Dec 2026)

S.No.	MONTH	WEEK	CONTENTS	REMARKS
1	August	Week 2	Determine fineness of cement by Blaine's air permeability apparatus or by sieving.	
		Week 3	Determine specific gravity, standard consistency, initial and final setting times of cement.	
		Week 4	Checking of Practical Files	
		Week 5	Determine compressive strength of cement.	
2	September	Week 1	Checking of Practical Files	
		Week 2	Determine silt content in sand.	
		Week 3	Determine bulking of sand.	
		Week 4	Checking of Practical Files	
		Week 5	Determine bulk density of fine and coarse aggregates.	
3	October	Week 1	Determine water absorption of fine and coarse aggregates.	
		Week 2	Determine Fineness modulus of fine aggregate by sieve analysis.	
		Week 3	Determine elongation and flakiness index of coarse aggregates	
		Week 4	To prepare concrete mix of a particular grade and determine compressive strength of concrete for 7 and 28 days.	
		Week 5	Determine workability of concrete by compaction factor test.	
4	November	Week 1	House Test Examinations	
		Week 2	Determine workability of concrete by slump cone test.	
		Week 3	Demonstration of NDT equipment.	
		Week 4	Checking of Practical Files	
		Week 5	Checking of Practical Files	



Signature of Teacher
(Er Garima Sharma)


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LESSON PLAN FOR Geotechnical Engineering Lab (SEMESTER-3rd)SESSION: (Aug-Dec 2026)

S.No	MONTH	WEEK	CONTENTS	REMARKS
1	August	Week 2	Identification of rocks from the given specimen.	
		Week 3	Determine water content of given soil sample by oven drying method as per IS: 2720 (PartII)	
		Week 4	Checking of Practical Files	
		Week 5	Determine specific gravity of soil by pycnometer method as per IS 2720 (Part- III)	
		Week 1	Determine dry unit weight of soil in field by core cutter method as per IS 2720 (Part- XXIX).	
2	September	Week 2	Checking of Practical Files	
		Week 3	Determine dry unit weight of soil in field by sand replacement method as per IS 2720 (Part XXVIII).	
		Week 4	Determine Plastic and Liquid Limit along with Plasticity Index of given soil sample as per IS 2720 (PartV).	
		Week 5	Checking of Practical Files	
		Week 1	Determine Shrinkage limit of given soil sample as per IS 2720 (Part- V).	
3	October	Week 2	Determine grain size distribution of given soil sample by mechanical sieve analysis as per IS 2720 (PartIV).	
		Week 3	Checking of Practical Files	
		Week 4	Use different types of soil to identify and classify soil by conducting field tests-through Visual inspection, Dry strength test, Dilatancy test and Toughness test.	
		Week 5	Determine coefficient of permeability by falling head test as per IS 2720 (Part- XVII)	
		Week 1	House Test Examinations	
4	November	Week 2	Determine MDD and OMC by standard proctor test of given soil sample as per IS 2720 (Part VII).	
		Week 3	Checking of Practical Files	
		Week 4	Checking of Practical Files	


Signature of Teacher
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 (Dr.Lalit Goel)

Government Polytechnic Udaipur Camp at Sundernagar Distt Mandi (H.P) -175018
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Lesson Plan for SCA (Semester-3rd)Session: (August-November 2026)

Month	DATE	WEEK	ACTIVITIES	REMARKS
August, 2026	3,4	1st week	Cultural activities	
	10,11	2nd week	Sports Activities	
	17,18	3rd week	Story telling	
	24,25	4th week	Painting Practice	
September,2026	1	1st week	Quiz Competition	
	7,8	2nd week	Poetry Writing	
	14,15	3rd week	Campus Cleanliness	
	21,22	4th week	Sports Activities	
	28,29	5th week	Hobby class	
October,2026	5,6	2nd week	Essay Writing	
	12,13	3rd week	Sports Activities	
	19,20	4th week	Cultural activities	
	26,27	5th week	Declamation	
November,2026	2,3	1st week	Rangoli competition	
	16,17	3rd week	Community Service	
	23	4th week	Poster making	


 Signature of Teacher


 Signature Of H.O.D