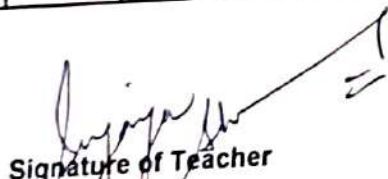
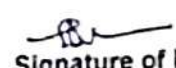


**Department of Civil Engineering**  
**Government Polytechnic Lahaul & Spiti at Udalpur Camp at Sundernagar Distt Mandi (H.P) -175018**

**Lesson Plan for Hydraulics (Semester-4th) Session: (27th Jan- 29 May 2025)**

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	Jan	Week 5	27,28, 29	<b>Unit – 1 Pressure measurement and Hydrostatic pressure</b> Technical terms used in Hydraulics –fluid, fluid mechanics, hydraulics, hydrostatics, and hydrodynamics - ideal and real fluid, application of hydraulics	
2	Feb	Week 1	1,	Physical properties of fluid – density-specific volume, specific gravity	
		Week 2	3,4,5	Surface tension, capillarity, and viscosity-Newton's law of viscosity Various types of pressure – Atmospheric Pressure, Gauge Pressure, Absolute Pressure, Vacuum Pressure.	
		Week 3	10,11,15	Concept of Pressure head and its unit, Pascal's law of fluid pressure and its uses. Measurement of differential Pressure by different methods	
		Week 4	17,18, 19,22	Variation of pressure with depth, Pressure diagram, hydrostatic pressure and center of pressure on immersed surfaces and on tank walls.	
		Week 5	24,25	Determination of total pressure and center of pressure on sides and bottom of water tanks, sides and bottom of tanks containing two liquids, vertical surface in contact with liquid on either side	
3	Mar	Week 1	1	<b>Unit- 2 Fluid Flow Parameters</b> Types of flow – Gravity and pressure flow, Laminar, Turbulent, Uniform, Non-uniform, Steady, Unsteady flow. Reynolds number	
		Week 2	3,4,5	Discharge and its unit, continuity equation of flow. Energy of flowing liquid potential, kinetic and pressure energy.	
		Week 3	10,11, 12, 15	Bernoulli's theorem: statement, assumptions, equations	Class Test- 1
		Week 4	17,18, 19,22	<b>Unit- 3 Flow through pipe</b> Major Head loss in pipe: Frictional loss and its computation by Darcy's Weisbach equation. Minor losses in pipe: loss at entrance, exit, sudden contraction, sudden enlargement, and fittings.	
		Week 5	24,25, 26,29	Flow through pipes in series, pipes in parallel	
4	April	Week 1	1,2,5	Dupuit's equation for equivalent pipe. Hydraulic gradient line and total energy line.	
		Week 2	7,8,9	<b>Unit- 4 Flow through Open Channel</b> Geometrical properties of channel section: Wetted area, wetted perimeter,	Class Test- 2
		Week 3	16,19	hydraulic radius for rectangular and trapezoidal channel section.	
		Week 4	21,22,23, 26	Determination of discharge by Chezy's equation and Manning's equation. Conditions for most economical rectangular and trapezoidal channel section.	
		Week 5	28,30	Discharge measuring devices: Triangular and rectangular Notches.	
5	May	Week 1	3	Velocity measurement devices: current meter,	
		Week 2	5,6,7	<b>House Test</b>	
		Week 3	13,14,17	floats and Pitot's tube Specific energy diagram, Froude's Number.	
		Week 4	19,20,21, 24	<b>Unit- 5 Hydraulic Pumps</b> Concept of pump, Types of pumps - centrifugal, reciprocating, submersible. Suction head, delivery head, static head, Manometric head. Selection and choice of pump.	
		Week 5	26,27,28	Revision	

  
**Signature of Teacher**  
 (Er Sujaya Sharma)

  
**Signature of HOD**  
 Dr. Lalit Goel

**Department of Civil Engineering**  
**Government Polytechnic Lahaul Spiti at Udaipur Camp At Sundernagar Distt Mandi (H.P) -175018**  
**Lesson Plan for Hydraulics Lab. G-I (Semester-2nd)Session: (Jan- May 2024)**

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	January	Week 5	30	Use piezometer to measure pressure at a given point	
2	February	Week 2	6	Use U tube differential manometer to measure pressure difference between two given points	
		Week 3	13	viva and file checking	
		Week 4	20	Find the resultant pressure and its position for given situation of liquid in a tank.	
		Week 5	27	Find the resultant pressure and its position for given situation of liquid in a tank.	
3	March	Week 2	6	viva and file checking	
		Week 3	13	Use Bernoulli's apparatus to apply Bernoulli's theorem to get total energy line for a flow in a closed conduit of varying cross sections.	
		Week 4	20	Determine minor losses in pipe fittings due to sudden contraction and sudden enlargement.	
		Week 5	27	viva and file checking	
4	April	Week 1	3	Determine minor losses in pipe fitting due to Bend and Elbow.	
		Week 2	10	Calibrate Venturimeter to find out the discharge in a pipe.	
		Week 4	17	Calibrate the Orifice to find out the discharge through a tank	
		Week 5	24	Use Current meter to measure the velocity of flow of water in open channel.	
5	May	Week 1	1	Use Pitot tube to measure the velocity of flow of water in open channel	
		Week 2	8	Use triangular notch to measure the discharge through open channel	
		Week 3	15	Use Rectangular notch to measure the discharge through open channel.	
		Week 4	22	viva and file checking	

  
**Signature of Teacher**  
 (Er Pawan Kumar)

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

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**Lesson Plan for Hydraulics Lab. G-II(Semester-4TH)Session: (Jan- May 2025)**

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	January	Week 5	28	Use piezometer to measure pressure at a given point	
2	February	Week 2	4	Use U tube differential manometer to measure pressure difference between two given points	
		Week 3	11	viva and file checking	
		Week 4	18	Find the resultant pressure and its position for given situation of liquid in a tank.	
		Week 5	25	Find the resultant pressure and its position for given situation of liquid in a tank.	
3	March	Week 2	4	viva and file checking	
		Week 3	11	Use Bernoulli's apparatus to apply Bernoulli's theorem to get total energy line for a flow in a closed conduit of varying cross sections.	
		Week 4	18	Determine minor losses in pipe fittings due to sudden contraction and sudden enlargement.	
		Week 5	25	viva and file checking	
4	April	Week 1	1	Determine minor losses in pipe fitting due to Bend and Elbow.	
		Week 2	8	Calibrate Venturimeter to find out the discharge in a pipe.	
		Week 4	22	Calibrate the Orifice to find out the discharge through a tank	
5	May	Week 1	6	Use Current meter to measure the velocity of flow of water in open channel.	
		Week 2	13	Use Pitot tube to measure the velocity of flow of water in open channel	
		Week 3	20	Use triangular notch to measure the discharge through open channel	
		Week 4	27	Use Rectangular notch to measure the discharge through open channel.	

  
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 (Er Pawan Kumar)

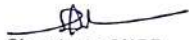
  
**Signature of H.O.D**  
 (Dr. Lalit Goel)

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**Lesson Plan for Essence of Indian Knowledge and Tradition (Semester-4th) Session:(27th Jan- 29 May 2025)**

S.No.	MONTH	WEEK	DATE	Unit	CONTENTS	REMARKS
1	Jan	Week 5	29	Indian Knowledge System	Intoduction and Function of Indian Knowledge System; The Basic Structure of Indian Knowledge System: The four Vedas, Rigveda, Yajurveda, Samaveda, Atharvaveda	
2	Feb	Week 1	1		The four Upvedas namely Ayurveda, Dhanurveda, Ghandharva-veda, Sthapatyaveda	
		Week 2	5		The six Vedangas namely Shiksha, Kalpa, Vyakarana, Chhandas, Nirukta and Jyotisha	
		Week 3	15		Itihasa ( Ramayan, Mahabharata) and Purana ( Vishnupuran and Bhagvata) ; Dharmashastra : Manusmriti, Yagyavalkya Smriti etc.	
		Week 4	19,22		Darshan : Nyaya, Logic and Epistemology	
3	Mar	Week 1	1	Modern Science	Modern Science : Introduction, Characteristics, Importance and Example	Class Test-1
		Week 2	5		Difference between Modern Science and Indian Knowledge System	
		Week 3	12,15		Role of IKS in Modern Science	
		Week 4	19,22	Traditional Knowledge	Traditional Knowledge: Definition, Nature, Characteristics, Scope and Importance; Indegenous Knowledge: Characteristics	
		Week 5	26,29		Traditional Knowledge vis-à-vis Indegenous Knowledge ; Traditional knowledge Vs Western Knowledge; The need for Protecting Traditional Knowledge	
4	April	Week 1	2,5	Yoga and Holistic Health Care	Yoga: Meaning and Importance of Yoga; Yoga and Physical Health, Yoga and Psychological Health, Yoga and Intellectual Health, Yoga and Spiritual Health, Yoga and Social Approach	Class Test-2
		Week 2	9		Introduction to Ashtanga Yoga, Yogic Kriyas ( Shat Karma), Pranayama and its types, Active Lifestyle and Stress Management through Yoga	
		Week 3	16,19		Physical Fitness, Health and Wellness: Meaning and Importance of Wellness ; Components of Wellness, Health and Physical Fitness	
		Week 4	23,26		Traditional Sports and Reginal Games for Promoting Wellness; Leadership through Physical Activity and Sports: Introduction to First Aid	
		Week 5	30			
5	May	Week 1	3	Himachal Pradesh: A Basic Information	History, Culture, Heritage/ Tradition, Customs and Manners	
		Week 2	7		<b>HOUSE-TEST</b>	
		Week 3	14,17		Regional Knowledge, Geographical Features, Constitutional History	
		Week 4	21,24		Tourism: Places and Scope	
		Week 5	28		Festivals and Fairs	


  
**Signature of Teacher**  
 (Ms Prerna Sharma)

  
**Signature of HOD**  
 Dr. Lalit Goel

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**Government Polytechnic Lahaul & Spiti at Udalpur Camp at Sundernagar Distt Mandi (H.P) -175018**  
**Lesson Plan for Railway Bridges & Tunnels (Semester-4th) Session: (27th Jan- 29th May 2026)**

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	Jan	Week 5	27,28&29	<b>PART-1: RAILWAYS</b> Introduction to Indian Railways, Railways surveys: Factors influencing the railways route, brief description of various types of railway survey	
2	Feb	Week 2	3,4 &5	Classification of permanent way describing its component part Rail Gauge, Definition, types, practice in India	
		Week 3	10&11	Rail – types of rails Rail Fastening: Rail joints, types of rail joints,	
		Week 4	17,18&19	Fish plates, spikes bearing plates Sleepers: Functions of sleepers, types of sleepers, requirements of an ideal material of Sleepers.	
		Week 5	24&25	Ballast: Function of ballast, requirements of an ideal material of ballast Crossing and signalling: Brief description regarding different types of crossing/signalling	
3	March	Week 2	3,4&5	Maintenance of track: Necessity, track fixtures;	
		Week 3	10,11 &12	Maintenance and boxing of ballast, maintenance gauges, tools Drains, methods of construction.	
		Week 4	17,18&19	<b>PART-II: BRIDGES</b> Introduction, Bridge—its function and component parts, difference between a bridge and A culvert	
		Week 5	24,25&26	Classification of Bndges Their structural elements and suitability. According to life-permanent and temporary, According to deck level—Deck, through and semi-through	
		Week 1	1 &2	According to material—timber, masonry, steel, RCC, pre-stressed IRC classification	
4	April	Week 2	7,8&9	Bridge Foundations: Introduction to open foundation pile foundation, Well foundation Piers, Abutments and Wing walls	
		Week 3	16	Class test	
		Week 4	21,22 &23	Piers—definition, parts; types—solid (masonry and RCC), open Abutment sand wing walls—definition, types of abutment (straight and tee), abutment with wing walls (straight, splayed, return and curved)	
		Week 5	28&30	Bridge beanngs Purpose of bearing; types of bearing—fixed plate, rocker and roller, Maintenance of Bridges , Inspection of bridges , Routine maintenance	
		Week 2	5,6&7	<b>PART-III: TUNNELS</b> □ Definition and necessity of tunnels □ Typical section of tunnels for a national highway and single and double broad gauge railway track.	
5	May	Week 3	13&14	<b>House Test</b>	
		Week 4	9,20&2	double broad gauge railway track. Ventilation-necessity and methods of ventilation, by blowing, exhaust and combination of blowing and exhaust	
		Week 5	26,27&28	Drainage method of draining water in tunnels Lighting in tunnels & lining of tunnels and revision	

  
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 (Dr Lalit Goel)

  
**Signature of HOD**  
 Dr. Lalit Goel

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

**Lesson Plan for Transportation Engineering (Semester-4th) Session:(27th Jan- 29 May 2025)**

S.No	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	Jan	Week 5	30,31	Role of transportation in the development of nation, Scope and Importance of roads in India and its Characteristics	
2	Feb	Week 1	1	Different modes of transportation – land way, waterway, airway railway	
		Week 2	6,7	Merits and demerits of roadway and railway. General classification of roads Selection and factors affecting road alignment	
		Week 3	13,14, 15	<b>Unit- 2 Geometric Design of Highway Camber:</b> Definition, purpose, types as per IRC – recommendations	
		Week 4	20,21, 22	Kerbs Road margin, road formation, right of way Design speed and various factors affecting design speed as per IRC –recommendations Gradient: Definition, types as per IRC – Recommendations	
		Week 5	27,28	Sight distance (SSD) Definition, types IRC – recommendations, simple numerical. Curves: Necessity, types: Horizontal, vertical curves.	
3	Mar	Week 1	1	Super elevation Definition, formula for calculating minimum and maximum Super elevation	
		Week 2	6,7	and method of providing super-elevation Standards cross-sections of national highway in embankment and cutting	
		Week 3	13,14	<b>Unit- 3 Construction of Road Pavements</b> Types of road materials and their Tests – Test on aggregates- Flakiness and Elongation Index tests, Angularity Number test,	<b>Class Test- 1</b>
		Week 4	20,21, 22	test on Bitumen- penetration, Ductility, Flash and Fire point test and Softening point test Pavement – Definition, Types, Structural Components of pavement and their functions. Construction of WBM road. Merits and demerits of WBM & WMM road	
		Week 5	27,28, 29	Construction of Flexible pavement / Bituminous Road, Types of Bitumen and its proper- ties, Emulsion, Cutback, Tar, Terms used in BR-prime coat, tack coat, seal coat, Merits and Demerits of BR.	
4	April	Week 1	3,4,5	Cement concrete road methods of construction, Alternate and Continuous Bay Method, Construction joints, filler and sealers, merits and demerits of concrete roads. Types of joint.	
		Week 2	10,11	<b>4 Basics of Railway Engineering</b> Classification of Indian Railways, zones of Indian Railways. Permanent way: Ideal requirement, Components; Rail Gauge, types, factors affecting selection of a gauge. Rail, Rail Joints - requirements, types Creep of rail causes and prevention.	
		Week 3	17,19	<b>Unit-5 Track geometrics</b> , Construction and Maintenance Alignment- Factors governing rail alignment	<b>Class Test- 2</b>
		Week 4	24,25, 26	Track Cross sections – standard cross section of single and double line in cutting and embankment. Important terms- permanent land, formation width, side drains Railway Track Geometrics: Gradient, curves- types and factors affecting, grade compensation, super elevation, limits of Super elevation on curves,	
5	May	Week 1	1,2,3	cant deficiency, negative cant, coning of wheel, tilting of rail Branching of Tracks, Points and crossings, Turn out- types, components, functions and inspection. Track junctions: crossovers, scissor cross over, diamond crossing, track triangle.	
		Week 2	8,9	<b>House Test</b>	
		Week 3	15,16, 17	Station -Purpose, requirement of railway station, important technical terms, types of rail- way station, factors affecting site selection for railway station Station yard: Classification- Passenger, goods, locomotive and marshalling yards.	
		Week 4	22,23, 24	Function & drawbacks of marshalling yards. Track Maintenance- Necessity, Classification, Tools required for track maintenance with their functions, Organization of track maintenance, Duties of permanent way inspector, gang mate and Key man	

Signature of Teacher  
 (Er Sujaya Sharma)

Signature of HOD  
 Dr. Lalit Goel

**Government Polytechnic Lahaul Spiti at Udaipur Camp at Sundernagar Distt Mandi (H.P) -175018**  
**Department of Civil Engineering**

**Lesson Plan for Building Planning & Drawing (Semester- 4th ) Session: (Jan- May) 2025**

S.N	MONTH	WEEK	Date	CONTENTS	REMARKS
1	February	Week 1	1	Conventions as per IS 962, symbols for different materials such as earthwork, brickwork, stonework, concrete, woodwork, and glass. Graphical symbols for doors and windows, Abbreviations, symbols for sanitary and electrical installations.	
		Week 3	15	Types of lines-visible lines, centre line, hidden line, section line, dimension line, extension line, pointers, arrowhead, or dots. Appropriate size of lettering and numerals for titles, sub-titles, notes, and dimensions. Types of scale- Monumental, Intimate, criteria for Proper Selection of scale for various types of drawing. Sizes of various standard papers/sheets.	
		Week 4	22	Sizes of various standard papers/sheets. Reading and interpreting readymade Architectural building drawing (To be procured from Architect, Planning Consultants, Planning Engineer). Unit- II Planning of Building Principles of planning for Residential and Public building- Aspect, Prospect, Orientation, Grouping, Privacy, Elegance, Flexibility, Circulation, Furniture requirements, Sanitation, Economy. Space requirement and norms for minimum dimension of different units in the residential and public buildings as per IS 962.	
2	March	Week 1	1	Rules and byelaws of sanctioning authorities for construction work. Plot area built up area, super built-up area, plinth area, carpet area, floor area and FAR (Floor Area Ratio). Line plans for residential building of minimum three rooms including water closet (WC), bath and staircase as per principles of planning. Line plans for public building-school building, primary health centre, restaurant, bank, post office, hostel, Function Hall and Library.	
		Week 3	15	Drawing of Single storey Load Bearing residential building (2 BHK) with staircase. Data drawing –plan, elevation, section, site plan, schedule of openings, .	Class Test-I
		Week 4	22	construction notes with specifications, area statement, Planning and design of staircase- Rise and Tread for residential and public building	
		Week 5	29	Working drawing – developed plan, elevation, section passing through staircase or WC and bath. - Foundation plan of Load bearing structure.	
3	April	Week 1	5	Drawing of Two storeyed Framed Structure (G+1), residential building (2 BHK) with stair- case. Data drawing – developed plan, elevation, section	
		Week 3	19	site plan, schedule of openings, construction notes with specifications, area statement. Planning and design of staircase- Rise and Tread for residential and public building.	Class Test-II
		Week 4	26	Working drawing of Framed Structure – developed plan, elevation, section passing through staircase or WC and bath. Foundation plan of Framed StructureDetails of RCC footing, Column, Beam, Chajjas,	
4	May	Week 1	3	Drawing with CAD- Draw commands, modify commands, layer commands.	
		Week 3	17	<b>House Test</b>	
		Week 4	24	Revision	

Signature of Teacher  
(Er. Manoj Kumar Thakur)

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Dr. Lalit Goel

Government Polytechnic Lahaul Spiti at Udaipur Camp at Sundernagar Distt Mandi (H.P) -175018  
 Department of Civil Engineering  
 Lesson Plan for Building Planning & Drawing Lab (Semester- 4th ) Session: (Jan-May) 2025

S.N	MONTH	WEEK	Date	CONTENTS	REMARKS
1	January	Week 5	30.31	Draw various types of lines	
2	February	Week 2	6,7	Graphical symbols for materials, doors and windows, symbols for sanitary, water supply and electrical installations and write abbreviations as per IS 962.	
		Week 3	13,14	Draw line plan to suitable scale (1BHK, staircase, WC and Bathroom)	
		Week 4	20,21	Draw line plans to suitable scale for the following Public Buildings (School Building and Community Hall)	
		Week 5	27,28	Draw line plans to suitable scale for the following Public Buildings (School Building and Community Hall).	
3	March	Week 2	6,7	Draw submission drawing to the scale 1:100 of a single storey load bearing residential building (2BHK) with flat Roof and staircase showing a. Developed plan and elevation b. Section passing through Stair or W.C. and Bath c. Foundation plan and schedule of openings. d. Site plan (1:200), area statement, construction notes.	
		Week 3	13,14	Draw submission drawing, to the scale of 1:100, of (G+1) Framed Structure Residential Building (2BHK) with Flat Roof and staircase showing: a. Developed plan b. Elevation.	Class-I
		Week 4	20,21	c. Section passing through Staircase, WC and Bath d. Site plan (1:200) and area statement	
		Week 5	27,28	e. Schedule of openings and Construction Notes.	
4	April	Week 1	3,4	Draw working drawing for above mentioned drawing at serial number 3 showing: a. Foundation plan to the scale 1:50	
		Week 2	10,11	b. Detailed enlarged section of RCC column and footing with plinth filling.	
		Week 3	17,18	c. Detailed enlarged section of RCC Beam, Lintel and Chajjas.	Class-II
		Week 4	24,25	Draw the above-mentioned drawing at serial number 3 using CAD software and enclose the printout. a. Developed plan b. Elevation.	



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5	May	Week 1	1,2	c. Section passing through Staircase, W.C. and Bath d. Foundation plan.	
		Week 2	8,9	Site plan (1:200), area statement, Schedule of openings and construction notes.	
		Week 3	15,16	House Test	
		Week 4	22,23	Reperform	
		Week 5	29	Reperform	

Signature of Teacher  
(Er. Manoj Kumar Thakur)  
(Er. Sujaya Sharma)



Signature of HOD  
(Dr. Lalit Goel)



**Government Polytechnic Lahaul Spiti at Udalpur Camp At Sundernagar Distt Mandi (H.P) -175018**  
**Department of Civil Engineering**  
**Lesson Plan for Construction Management (Semester-4th) Session: (Jan- May 2025)**

SN	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	January	Week 5	28,31	Organization-objectives, principles of organization	
		Week 1	1	Types of organization Government/public and private construction industry.	
		Week 2	4,7	Role of various personnel in construction organization	
2	February	Week 3	11,14,15	Agencies associated with construction work- owner, promoter, builder, designer, architects.	
		Week 4	18,21,22	Role of consultant for various activities. Preparation of Detailed Project Report (DPR).	
		Week 5	25,28	Monitoring of progress and quality, settlement of disputes	
		Week 1	1	Principles governing site layout Factors affecting site layout.	
		Week 2	4,7	Preparation of site layout	Class Test - I
3	March	Week 3	11,14,15	Land acquisition procedures and providing compensation	
		Week 4	18,21,22	Identifying broad activities in construction work & allotting time to it, Methods of Scheduling, Development of bar charts, Merits & limitations of bar chart.	
		Week 5	25,28,29	Elements of Network: Event, activity, dummy activities, Precautions in drawing Network.	
				Numbering the events. CPM networks, activity time estimate, Event Times by forward & backward pass calculation, start and finish time of activity, project duration.	
		4	April	Week 1	1,4,5
Week 2	8,11			Normal Time and Cost, Crash Time and Cost, Cost slope, Optimization of cost and duration. Material Management- Ordering cost, inventory carrying cost	
Week 3	15,18,19			Economic Order Quantity Store management, various records related to store management, inventory control by ABC technique, Introduction to material procurement through portals	Class Test - II
Week 4	22,25,26			Types of Construction contracts, Contract documents, specifications, general special conditions	
Week 5	29			Contract Management, procedures involved in arbitration and settlement (Introduction only)	
5	May	Week 1	2,3	Safety in Construction Industry—Causes of Accidents, Remedial measure.	
		Week 2	6,9	<b>House Test</b>	
		Week 3	13,16,17	Labour Laws and Acts pertaining to Civil construction activities (Introduction only)	
		Week 4	20,23,24	Revision	
		Week 5	27	Revision	

Signature of Teacher  
(Er Manoj Kumar Thakur)

Signature of HOD  
(Dr. Lalit Goel)


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**Department of Civil Engineering**

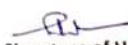
**Lesson Plan for Advanced Surveying (Semester-4th ) Session: (Jan-May) 2025**

S. No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	January	Week 5	27,28,30	Principles of plane table survey. Accessories of plane table and their use, Telescopic alidade.	
2	February	Week 2	3,4,6	Setting of plane table; Orientation of plane table - Back sighting and Magnetic meridian method. Methods of plane table surveys- Radiation, Intersection and Traversing	
		Week 3	10,11,13	Merits and demerits of plane table survey. Theodolite Surveying, Types and uses of Theodolite, Components of transit Theodolite and their functions, Reading the Vernier of transit Theodolite.	
		Week 4	17,18,20	Technical terms- Swinging, Transiting, Face left, Face right. Fundamental axes of transit Theodolite and their relationship	
		Week 5	24,25,27	Temporary adjustment of transit Theodolite. Measurement of horizontal angle- Direct and Repetition method, Errors eliminated by method of repetition.	
3	March	Week 2	3,4,6	Measurement of horizontal angle- Direct and Repetition method, Errors eliminated by method of repetition. Measurement of magnetic bearing	
		Week 3	10,11,13	Theodolite traversing by included angle method and Deflection angle method. Traverse Computation- Latitude, Departure, Consecutive coordinates, independent coordinates.	Class Test-I
		Week 4	17,18,20	Principles of Tacheometry, Tacheometer, and its component parts, Anallatic lens. Tacheometric formula for horizontal distance with telescope horizontal and staff vertical	
		Week 5	24,25,27	Field method for determining constants of tacheometer, determining horizontal and vertical distances with tacheometer by fixed hair method and staff held vertical, Limitations of tacheometry	
4	April	Week 1	1,3	Types of curves used in roads. Designation of curves. Setting simple circular curve by offsets from long chord and	
		Week 2	7,8,10	Rankine's method of deflection angles.	
		Week 3	17	Principle of Electronic Distance Meter (EDM), its component parts and their Functions, use of EDM.	Class Test-II

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		Week 4	21,22,24	Use of micro-optic Theodolite and Electronic Digital Theodolite. Use of Total Station, Use of function keys.
		Week 5	28	Remote sensing, GPS and GIS, Remote Sensing – Overview,
5	May	Week 1	1	Remote sensing system
		Week 2	5,6,8	<b>House Test</b>
		Week 3	13,15	Use of Global Positioning System (G.P.S.) instruments. Geographic Information System (GIS): Overview, Components, Applications, Software for GIS.
		Week 4	19,20,22	Overview, Components, Applications, Software for GIS. Introduction to Drone Surveying.
		Week 5	26,27	Revision

  
Signature of Teacher  
(Er Nawang Negi)

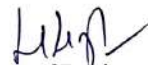
  
Signature of H.O.D  
(Dr. Lalit Goel)


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

**Department of Civil Engineering**

**Lesson Plan for Advanced Surveying Lab G-I (Semester-4th ) Session: (Jan-May) 2025**

S. No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	January	Week 5	27,31	Use plane table survey to prepare plans of a plot of seven-sided closed traverse by Radiation Method.	
2	February	Week 2	3,7	Use plane table survey to prepare plans, locate details by Intersection Method.	
		Week 3	10,14	Use plane table survey to prepare plans, locate details by Traversing Method.	
		Week 4	17,21	Use plane table survey to carry out Survey Project for closed traverse for minimum five sides around a building.	
		Week 5	24,28	Use transit theodolite to measure Horizontal and Vertical angle by Direct	
3	March	Week 2	3,7	Plot the traverse on A1 size imperial drawing sheet for the collected data from preceding Theodolite Survey Project.	
		Week 3	10	Use Theodolite as a Tacheometer to compute reduced levels and horizontal distances.	
		Week 4	17,21	Set out a circular curve by Rankine's Method of Deflection Angles	
		Week 5	24,28	Use micro-optic Theodolite to Measure Horizontal angle by Direct Method.	
4	April	Week 1	5	Use EDM to measure horizontal distance.	
		Week 2	7,11	Use Total station instrument to measure horizontal distances.	
		Week 3		Use Total station instrument to measure vertical angle	
		Week 4	21,25	Use Total station instrument to carry out Survey Project for closed traverse for minimum five sides.	
		Week 5	28	Plot the traverse on A1 size imperial drawing sheet for the collected data from preceding Total Station Survey Project.	
5	May	Week 1	2	Use GPS to locate the coordinates of a station	
		Week 2	5,9	<b>House Test</b>	
		Week 3	16	Reperform	
		Week 4	19,23	Reperform	
		Week 5	26	Reperform	

  
**Signature of Teacher**  
 (Er Nawang Negi)

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

**Government Polytechnic Lahaul Spiti at Udaipur Camp at Sundernagar Distt Mandi (H.P) -175018  
Department of Civil Engineering**

**Lesson Plan for Advanced Surveying Lab G-II (Semester-4th ) Session: (Jan-May) 2025**

S. No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	January	Week 5	28	Use plane table survey to prepare plans of a plot of seven-sided closed traverse by Radiation Method.	
2	February	Week 2	5,7	Use plane table survey to prepare plans, locate details by Intersection Method.	
		Week 3	14	Use plane table survey to prepare plans, locate details by Traversing Method.	
		Week 4	19,21	Use plane table survey to carry out Survey Project for closed traverse for minimum five sides around a building.	
		Week 5	28	Use transit theodolite to measure Horizontal and Vertical angle by Direct	
3	March	Week 2	5,7	Plot the traverse on A1 size imperial drawing sheet for the collected data from preceding Theodolite Survey Project.	
		Week 3	12	Use Theodolite as a Tacheometer to compute reduced levels and horizontal distances.	
		Week 4	19,21	Set out a circular curve by Rankine's Method of Deflection Angles	
		Week 5	26,28	Use micro-optic Theodolite to Measure Horizontal angle by Direct Method.	
4	April	Week 1	2,4	Use EDM to measure horizontal distance.	
		Week 2	9,11	Use Total station instrument to measure horizontal distances.	
		Week 3	16	Use Total station instrument to measure vertical angle	
		Week 4	23,25	Use Total station instrument to carry out Survey Project for closed traverse for minimum five sides.	
		Week 5	30	Plot the traverse on A1 size imperial drawing sheet for the collected data from preceding Total Station Survey Project.	
5	May	Week 1	2	Use GPS to locate the coordinates of a station	
		Week 2	7,9	<b>House Test</b>	
		Week 3	14,16	Reperform	
		Week 4	21,23	Reperform	
		Week 5	28	Reperform	

  
Signature of Teacher  
(Er Nawang Negi)

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

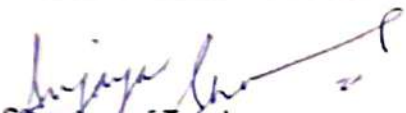
Department of Civil Engineering


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

Lesson Plan for Transportation Engineering Lab G-1(Semester-4th)

Session: 27th Jan-29th May 2025)

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	Jan	Week 1	28	1 Draw the sketches showing standard cross sections of Expressways, Freeways, NH/SH, MDR/ODR.	
2	Feb	Week 2	4	2 Flakiness and Elongation Index of aggregates.	
		Week 3	11	3 Angularity Number of aggregates	
		Week 4	18	4 Aggregate impact test	
		Week 5	25	5 Los Angeles Abrasion test	
3	Mar	Week 2	4	6 Aggregate crushing test	
		Week 3	11	7 Softening point test of bitumen	
		Week 4	18	8 Penetration test of bitumen.	
		Week 5	25	9 Flash and Fire Point test of bitumen.	
4	April	Week 1	1	Checking Of Files	
		Week 2	8	10 Ductility test of Bitumen	
		Week 4	22	11 Visit the constructed road for visual inspection to identify defects and suggest remedial measures.	
5	May	Week 2	6	12 Prepare the photographic report containing details for experiment No. 11	
		Week 3	13	13 Visit the hill road constructed site to understand its components.	
		Week 4	20	14 Prepare the photographic report containing details for experiment No. 13	
		Week 5	27	Checking Of Files	


  
Signature of Teacher  
(Er Sujaya Sharma)


  
Signature of HOD  
Dr. Lalit Goel

Department of Civil Engineering  
Government Polytechnic Lalit & Soti at Udaipur Camp at Sundernagar Distt Wardi (R.P) - 373018

Lesson Plan for Transportation Engineering Lab G-II (Semester-4th)  
Session: 2021-22 (1st May 2022)

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	Jan	Week 1	30	1 Draw the sketches showing standard cross sections of Expressways, 2 Trunks, NH/SH, WOR/COR.	
2	Feb	Week 2	6	2 Firmness and Compaction Index of aggregates.	
		Week 3	13	3 Angularity Number of aggregates.	
		Week 4	20	4 Aggregate impact test.	
		Week 5	27	5 Los Angeles Abrasion test.	
3	Mar	Week 1	6	6 Aggregate crushing test.	
		Week 2	13	7 Softening point test of bitumen.	
		Week 4	27	8 Penetration test of bitumen.	
		Week 5	27	9 First and Fine Part test of bitumen.	
4	Apr	Week 1	3	10 Quality test of bitumen.	
		Week 2	10	11 Visit the construction site for visual inspection to identify defects and suggest remedial measures.	
		Week 3	17	12 Prepare the photographic record containing details for identification No. 11.	
		Week 4	24	13 Visit the toll road construction site to understand its components.	
5	May	Week 1	1	14 Prepare the photographic record containing details for identification No. 13.	
		Week 2	8	Checking Of Files	
		Week 3	15		
		Week 4	22		

  
Signature of Teacher  
(E-Supri Sharma)

  
Signature of HOD  
Dr. Lalit Goel



GOVT. POLYTECHNIC LAHAUL & SPITI AT UDAIPUR CAMP AT SUNDER NAGAR, MANDI H. P.

LESSON PLAN 4th SEMESTER CIVIL ENGG

January	Date	week	Activity
1	29	4	race 100 m 200 m
February			
1	1	1	long jump
2	5	2	do
3	15	3	jablin
4	19,22	4	do
March			
1	1	1	shot put
2	5	2	Discus, throw
3	12,15	3	do
4	19,22	4	kabddi
5	26,29S	5	Basket, boll
April			
1	2,5	1	do
2	9	2	Quiz Compition
3	16,19	3	cultural activity
4	23,26	4	do
5	30	5	do
May			
1	3	1	volley boll
2	7	2	paper reading contest
3	14,17	3	clinnes of camps
4	21,24	4	gust lecturer
5	28,31	5	clinannes campes