

Department of Civil Engineering
Government Polytechnic Lahaul Spiti at Udaipur Camp at Sundernagar Distt Mandi (H.P) -175018
Lesson Plan for Concrete Technology (Semester-4th) Session: Feb-June 2023)

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	February	Week 3	14,15,16	Introduction: Definition of concrete, uses of concrete in comparison to other building materials.	
		Week 4	21,22,23	Ingredients of Concrete Overview of OPC & PPC only (Properties and uses only), Aggregates: Classification of aggregates according to size and shape Characteristics of aggregates: Particle size and shape, surface texture, specific gravity of aggregate; bulk density, water absorption, surface moisture, bulking of sand, deleterious materials soundness	
		Week 5	28	Grading of aggregates: coarse aggregate, fine aggregate; All-in- aggregate; fineness modulus 2.3 Water: Quality requirements as per IS:456-2000	
				Water Cement Ratio 3.1 Hydration of cement principle of water-cement ratio, Duff Abram's Water- cement ratio law: Limitations of water-cement ratio law and its effects on strength of concrete.	
2	March	Week 1	1,2	Workability: Workability factors affecting workability,	
		Week 2	7,9	Measurement of workability: slump test, compacting factor and Vee Bee consistometer; Recommended slumps for placement in various condition as per IS:456-2000/SP-23	
		Week 3	14,15,16	Properties of Concrete Properties in plastic state: Workability, Segregation, Bleeding and Harshness, Properties in hardened state: Strength, Durability, Impermeability, Dimensional changes;	
		Week 4	21,22,23	Revision	Class Test - I
		Week 5	28,29	Proportioning for Normal and Controlled Concrete. Objectives of mix design, introduction to various grades as per IS:456-2000;	
		Week 2	4,5,6	proportioning for nominal mix design as prescribed by IS 456-2000, Adjustment on site for: Bulking of aggregate, water absorption of aggregate, workability. Difference between nominal and controlled concrete.	
		Week 3	11,12,13	Storing & batching of concrete ingredients Storing of Cement: Storing of cement in a warehouse, Storing of cement at site, Effect of storage on strength of cement Determination of warehouse capacity for storage of Cement	
		Week 4	18,19,20	Revision	Class Test - II

3	April	Week 5	25,26,27	Storing of Aggregate: Storing of aggregate on site, Batching, Batching of Cement Batching of aggregate by: Volume, using gauge box, (farma) selection of proper gauge box. Weight spring balances and by batching machines Measurement of water.	
		Week 5		Mixing, Transportation & placement of concrete, Hand mixing, Machine mixing -types of mixers, Transportation of concrete: Transportation of concrete using pans, wheel barrows, transit mixers, chutes, belt conveyors, pumps, tower crane and hoists etc. 8.4 Placement of concrete: Checking of form work, shuttering and precautions to be taken during placement.	
4	May	Week 1	2,3,4	Compaction, Finishing & Curing of concrete, Hand compaction, Machine compaction - types of vibrators, internal screed vibrators and form vibrators	
		Week 2	9,10,11	HOUSE TEST	
		Week 3	23,24,25	9.3 Selection of suitable vibrators for different situations 9.4 Finishing concrete slabs -screeding, floating and trowelling 9.5 Curing: Objective, methods of curing like ponding, membrane curing, steam curing, chemical curing 9.6 Duration for curing and removal of form work	
		Week 4	30,31	10. Admixtures 10.1 Types of admixtures along with their suitability (Specify types of admixtures)	
5	June	Week 1	1	11. Special Concrete Fibre reinforced concrete, Ready Mix concrete, High fly ash concrete	
		Week 2	5,6,8		

Signature of Teacher
(Er R.S.Chandel)

For Y.M.

Signature of H.O.D.
(Er Adit Rana)

Adit Rana

GOVERNMENT POLYTECHNIC LAHAUL & SPITI AT UDAIPUR CAMP AT SUNDERNAGAR, DISTT MANDI (H.P)
DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN FOR CONCRETE TECHNOLOGY LAB GROUP 1 (SEMESTER-4TH)SESSION: (Feb - June 2023)

Sr No	MONTH	WEEK	DATES	CONTENTS	REMARKS
1	February	Week 3	17	Introduction Concrete Technology Lab	
		Week 4	24	To determine flakiness and elongation index of coarse aggregates	
2	March	Week 1	3	Method to determine silt in fine aggregate	
		Week 2	10	Determination of specific gravity and water absorption of aggregates	
		Week 3	17	Determination of bulk density and voids of aggregates	
		Week 4	24	To determine surface moisture in fine aggregate by displacement method	
		Week 5	31	Determination of particle size distribution of fine, coarse and all in aggregate by sieve analysis (grading of aggregate)	
3	April	Week 4	21	To determine necessary adjustment for bulking of fine aggregate	
		Week 5	28	To determine workability by slump test	
4	May	Week 2	12	Compaction factor test for workability	
		Week 3	19	Tests for compressive strength of concrete cubes for M-20	
		Week 4	26	Revision	
5	June	Week 1	2	Revision	
		Week 2	9	Revision	



Signature of Teacher
(Er Adit Rana)


Signature of Q.I.C
(Er Adit Rana)

GOVERNMENT POLYTECHNIC LAHAUL & SPITI AT UDAIPUR CAMP AT SUNDERNAGAR, DISTT MANDI (H.P)
DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN FOR CONCRETE TECHNOLOGY LAB GROUP 2 (SEMESTER-4TH)SESSION: (Feb - June 2023)

Sr No	MONTH	WEEK	DATES	CONTENTS	REMARKS
1	February	Week 4	25	To determine flakiness and elongation index of coarse aggregates	
2	March	Week 1	4	Method to determine silt in fine aggregate	
		Week 3	18	Determination of specific gravity and water absorption of aggregates	
		Week 4	25	Determination of bulk density and voids of aggregates	
3	April	Week 1	1	To determine surface moisture in fine aggregate by displacement method	
		Week 5	29	Determination of particle size distribution of fine, coarse and all in aggregate by sieve analysis (grading of aggregate)	
4	May	Week 1	6	To determine necessary adjustment for bulking of fine aggregate	
		Week 3	20	To determine workability by slump test	
		Week 4	27	Compaction factor test for workability	
5	June	Week 1	3	Tests for compressive strength of concrete cubes for M-20	



Signature of Teacher
(Er Adit Rana)



Signature of O.I.C
(Er Adit Rana)


GOVT. POLYTECHNIC LAHAUL & SPITI AT UDAIPUR CAMP AT SUNDERNAGAR DISTT. MANDI(H.P.)

DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN FOR WATER SUPPLY & WASTE WATER ENGG. (SEMESTER- 4TH) SESSION : (Feb-June 2023)

WATER SUPPLY & WASTE WATER ENGG. (SEMESTER- 4TH) SESSION : (Feb-June 2023)							
S.NO.	MONTH	WEEK	DATES	CONTENTS		REMARKS	
1	FEB	Week3	14,15,17	1 Introduction	Necessity and brief description of water supply system. Water requirementRate of demand and variation in rate of demand		
		Week 4	20,21,22,24,25	2 Quantity of water	Per capita consumption for domestic, industrial, public,and firefighting uses		
					Methods of Population Forecasting (Numerical Problems)		
					Meaning of pure water and methods of analysis of water		
		Week 5	27,28	3 Quality of water	Physical, Chemical and bacteriological tests and their significance Standard of potable water as per Indian Standard		
2	MAR	Week 1	1,3,4	4. Water Treatment	Sedimentation -purpose, types of sedimentation tanks.		
		Week 2	6,7,10,		Filtration -significance, types of filters, their suitability. Necessity of disinfection of water, forms of chlorination,Flow diagram of different treatment units,functions of (i) Aeration fountain (ii) mixer		
		Week 3	13,14,15,17,18	5. Conveyance of Water	Class test-1/ REVISION		
		Week 4	20,21,22,24,25		(iii) flocculator, (iv) classifier, Different types of pipes – cast iron, G.I. pipes and PVC and usesAppurtenances: Sluice, Air, Reflux valve, Relief valves and Scour valve.		
		Week 5	27,28,29,31		Fire Hydrants, Water Meters their working & uses. Distribution Systems: Gravity, Pumping, Combined Gravity& pumping		
			6. Building Water Supply	Layout of distribution systems along with their suitability. Water supply fixtures and installations and terminology related to plumbing			
		3	APRIL	Week 1	1	WASTE WATER ENGINEERING 7. Introduction	Purpose of sanitation . Necessity of systematic collection and disposal of waste.Definition of terms in sanitary engineering
Week 2	3,4,5			Collection and conveyance of sewage . Conservancy and water carriage systems, their advantages and disadvantages			
Week 3	10,11,12,			8. Sewerage System	Types of sewerage systems, materials for sewers,their sizes and joints Appurtenance:		
					Location, function and construction features. Manholes, catch basin, flushing tanks, oil &grease traps, ventilating shaftsetc.		

		Week 4	17,18,19,21		Class test-2/Revision
4	APRIL	Week 5	24,25,26,28,29	9. Laying and Construction	Setting out/alignment of sewers. Excavations, checking the gradient with boning rods, preparation of bedding, handling, jointing, testing and back filling of sewers/pipes.
5	MAY	Week 1	1,2,3,6	10 Sewage characteristics	Properties of sewage and BIS Standards For Analysis of sewage Physical, chemical and bacteriological parameters
		Week 2	8,9,10,12	House Test -2	
		Week 3	15,16,17,19,20	11 Sewage Treatment	Meaning and principle of primary and secondary treatment, aerobic & anaerobic treatment, activated sludge process with their flow diagrams.
		Week 4	23,24,26,27		Introduction and uses of screens, grit chambers, detritus tanks, skimming tanks, and disposal
		Week 5	29,30,31		secondary treatment and clarifiers, trickling filters, sludge treatment oxidation ponds, introduction to tertiary treatment Disposal by dilution Self purification of stream
6	JUNE	Week 1	2,3,	12. Smart Water & Waste	Smart Water & Waste Water Management
		Week 2	5,6	Revision	


 13/02/2023
 SUBJECT TEACHER
 SUJAYA SHARMA


 OIC
 Er. Adit Rana

GOVT. POLYTECHNIC LAHAUL & SPITI AT UDAIPUR CAMP AT SUNDERNAGAR DISTT. MANDI(H.P.)
DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN FOR WATER SUPPLY & WASTE WATER ENGG. LAB (SEMESTER- 4TH) SESSION : (Feb-June 2023)

G-1					
S.NO.	MONTH	WEEK	DATES	PRACTICALS	REMARKS
1	FEB	WEEK 3	14	Introduction to water Tests	
		WEEK 4	21	To determine turbidity of water sample.	
		WEEK 5	28	Viva and file checking	
2	MAR	WEEK 2	7	To determine dissolved oxygen of given sample.	
		WEEK 3	14	Viva and file checking	
		WEEK 4	21	To determine ph value of water.	
		WEEK 5	28	Viva and file checking	
3	APRIL	WEEK 2	4	To perform jar test for coagulation.	
		WEEK 3	11	Viva and file checking	
		WEEK 4	18	To determine residual chlorine in water.	
		WEEK 5	25	Viva and file checking	
4	MAY	WEEK 1	2	To determine conductivity of water and total dissolved solids.	
		WEEK 2	9	Viva and file checking	
		WEEK 3	16	Demonstration on use of different water supply and sanitary fittings.	
		WEEK 4	23		
		WEEK 5	30	Viva and file checking	
5	JUNE	WEEK 2	6	Viva and file checking	

SUBJECT TEACHER
SUJAYA SHARMA


OIC
Er. Adit Rana

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DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN FOR WATER SUPPLY & WASTE WATER ENGG. LAB (SEMESTER- 4TH) SESSION : (Feb-June 2023)

G-2					
S.NO.	MONTH	WEEK	DATES	PRACTICALS	REMARKS
1	FEB	WEEK 4	20	Introduction to water Tests	
		WEEK 5	27	To determine turbidity of water sample.	
2	MAR	WEEK 2	6	To determine dissolved oxygen of given sample.	
		WEEK 3	13	Viva and file checking	
		WEEK4	20	To determine ph value of water.	
		WEEK5	27	Viva and file checking	
		WEEK2	3	To perform jar test for coagulation.	
3	APRIL	WEEK 3	10	Viva and file checking	
		WEEK 4	17	To determine residual chlorine in water.	
		WEEK 5	24	Viva and file checking	
		WEEK 1	1	To determine conductivity of water and total dissolved solids.	
4	MAY	WEEK 2	8	Viva and file checking	
		WEEK 3	15	Demonstration on use of different water supply and sanitary fittings.	
		WEEK 5	29	Viva and file checking	
5	JUNE	WEEK 2	5	Viva and file checking	

Sujaya 13/02/23
SUBJECT TEACHER
SUJAYA SHARMA

Adit Rana
OIC
Er. Adit Rana

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


Lesson Plan for Soil Engineering (Semester-4th) Session: (Feb- June 2023)

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	February	Week 3	14,15	Introduction: 1.1 Importance of soil studies in Civil Engineering 1.2 Geological origin of soils with special reference to soil profiles in India: residual and transported soil, alluvial deposits, lake deposits, local soil found in H.P., dunes and loess, glacial deposits, conditions in which above deposits are formed and their engineering characteristics.	
		Week 4	20,21,22	Physical Properties of Soils: 2.1 Constituents of soil and representation by a phase diagram 2.2 Definitions of void ratio, porosity, degree of saturation, water content, specific gravity, unit weight, dry unit weight of soil grains and correlation between them 2.3 Simple numerical problems with the help of phase diagrams.	
		Week 5	27,28	Classification and Identification of Soils 3.1 Particle size, shape and their effect on engineering properties of soil, particle size classification of soils 3.2 Gradation and its influence on engineering properties 3.3 Relative density and its use in describing cohesionless soils Atterberg's limit - definitions, use and practical significance 3.5 Field identification tests for soils 3.6 Soil classification system as per BIS 1498; basis, symbols, major divisions and sub divisions, groups, plasticity chart; procedure for classification of a given soil.	
		Week 1	1	Flow of Water Through Soils: 4.1 Concept of permeability and its importance	
		Week 2	6,7	4.2 Darcy's law, coefficient of permeability, seepage velocity and factors affecting permeability 4.3 Comparison of permeability of different soils as per BIS 4.4 Methods of finding out permeability- Constant Head & Falling Head Test	

2	March	Week 3	13,14,15	Effective Stress 5.1 Stresses in sub soil 5.2 Definition and meaning of total stress, effective stress and neutral stress 5.3 Principle of effective stress, 5.4 Importance of effective stress in engineering problems 5.5 Quick sand Phenomenon Deformation of Soils: 6.1 Meaning, conditions/situations of occurrence with emphasis on practical significance of: a) Consolidation and settlement b) Creep	
		Week 4	20,21,22	REVISION	Class Test - I
		Week 5	27,28,29	c) Plastic flow d) Heaving e) Lateral movement f) Freeze and thaw of soil 6.2 Definition and practical significance of compression index, coefficient of consolidation, degree of consolidation	
3	April	Week 1	1	6.3 Meaning of total settlement, uniform settlement and differential settlement; rate of settlement and their effects 6.4 Settlement due to construction operations and lowering of water table. 6.5 Tolerable settlement for different structures as per BIS Strength Characteristics of Soils:	
		Week 2	3,4,5	7.1 Factors contributing to shear strength of soils Coulomb's law 7.2 Determination of shearing strength by direct shear test, unconfined compression test and Tri-axial Test only along with their advantages & disadvantages. 7.3 Drainage conditions of test and their significance, 7.4 Stress and strain curve, peak strength and ultimate strength, their significance 7.5 Examples of shear failure in soils Compaction:	
		Week 3	10,11,12	REVISION	Class Test - II
		Week 4	17,18,19	8.1 Definition and necessity of compaction and its differences with consolidation. 8.2 Laboratory compaction test (standard and modified proctor test as per IS) definition and importance of optimum water content, maximum dry density; moisture & dry density relationship for typical soils with different compactive efforts 8.3 Compaction control; Density control,	

		Week 5	24,25,26	measurement of field density by core cutter method and sand replacement method, moisture control, Proctor's needle and its use, thickness control, jobs of an embankment supervisor in relation to compaction. Soil Exploration 9.1 Purpose and necessity of soil exploration 9.2 Reconnaissance, methods of soil exploration, Trial pits, borings (auger, wash, rotary, percussion to be briefly dealt)	
4	May	Week 1	1,2,3	Bear 9.3 Sampling; undisturbed, disturbed and representative samples; selection of type of sample; thin wall and piston samples; area ratio, recovery ratio of samples and their significance, number and quantity of samples, setting, sealing and preservation of samples.	
		Week 2	8,9,10	House Test	
		Week 3	15,16,17	Capacity of soil: 10.1 Concept of bearing capacity 10.2 Definition and significance of ultimate bearing capacity, net safe bearing capacity and allowable bearing pressure 10.3 Guidelines of BIS (IS 6403) for estimation of bearing capacity	
		Week 4	23,24	10.4 Factors affecting bearing capacity, Concept of vertical stress distribution in soils due to foundation loads, pressure bulb 10.6 Plate load test and its limitations	
		Week 5	29,30,31	10.7 Introduction and applications of Standard Penetration Test (SPT) Retaining Wall: 11.1 Types of retaining wall – Gravity, cantilevered	
5	June	Week 2	5,6,7	Sheet piling, bored pile, anchored, soil nailing, soil-strengthened, Mechanical stabilized 11.2 Design of Gravity wall	


Signature of Teacher
(Er Manoj Kumar)


Signature of OIC
(Er Adit Rana)

Department of Civil Engineering
Government Polytechnic Lahaul Spiti at Udaipur Camp At Sundernagar Distt Mandi (H.P) -175018
Lesson Plan for Soil Engg. G-I (Semester-4th)Session: (Feb-June 2023)

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	February	Week 4	20	1. To determine the moisture content of the given sample of soil	
		Week 5	27	2. Auger Boring a) Identifying the equipment and accessories b) Collecting soil samples and their identification	
2	March	Week 2	6	3. Field Density Measurement by a) Sand Replacement Method b) Core Cutter Method	
		Week 3	13	REVISION	Class test-I
		Week 4	20	4. Liquid Limit and Plastic Limit Determination & shrinkage limit: a) Identifying various grooving tools b) Preparation of sample c) Conducting the test d) Observing soil behaviour during tests e) Computation, plotting and interpretation of results	
		Week 5	27	5. Mechanical Analysis a) Preparation of sample: Dry and Wet b) Conducting sieve analysis c) Computation of results d) Plotting the grain size distribution curve e) Interpretation of the curve	
		Week 1	3	Viva and Practical File Checking	
3	April	Week 2	10	6. Laboratory Compaction Tests (Standard and modified Proctor test) a) Preparation of sample b) Conducting the test c) Computation of results and plotting d) Determination of optimum moisture and maximum dry density	

		Week 3	17	REVISION	Class Test-II
		Week 4	24	7. Determination of permeability by constant head and falling head method	
4	May	Week 1	1	Viva and Practical File Checking	
		Week 2	8	Viva and Practical File Checking	
		Week 3	15	Shear strength determination by unconfined compression test	
		Week 5	29	Viva and Practical File Checking	
5	June	Week 2	5	Viva and Practical File Checking	

Signature of Teacher
(Er Manoj Kumar)


Signature of OIC
(Er Adit Rana)

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Lesson Plan for Soil Engg. G-II (Semester-4th)Session: (Feb-June2023)

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	February	Week 3	14	1. To determine the moisture content of the given sample of soil	
		Week 4	21	2. Auger Boring a) Identifying the equipment and accessories b) Collecting soil samples and their identification	
		Week 5	28	3. Field Density Measurement by a) Sand Replacement Method b) Core Cutter Method	
2	March	Week 2	7	4. Liquid Limit and Plastic Limit Determination & shrinkage limit: a) Identifying various grooving tools b) Preparation of sample c) Conducting the test d) Observing soil behaviour during tests e) Computation, plotting and interpretation of results	
		Week 3	14	REVISION	Class test-I
		Week 4	21	Viva and Practical File Checking	
		Week 5	28	5. Mechanical Analysis a) Preparation of sample: Dry and Wet b) Conducting sieve analysis c) Computation of results d) Plotting the grain size distribution curve e) Interpretation of the curve	
		Week 1	4	Viva and Practical File Checking	

3	April	Week 2	11	6. Laboratory Compaction Tests (Standard and modified Proctor test) a) Preparation of sample b) Conducting the test c) Computation of results and plotting d) Determination of optimum moisture and maximum dry density	
		Week 3	18	REVISION	Class Test-II
		Week 4	25	7. Determination of permeability by constant head and falling head method	
4	May	Week 1	2	Viva and Practical File Checking	
		Week 2	9	Viva	
		Week 3	16	Viva	
		Week 4	23	8. Shear strength determination by unconfined compression test	
		Week 5	30	Viva and Practical File Checking	
5	June	Week 2	6	Viva and Practical File Checking	


Signature of Teacher
 (Er Manoj Kumar)


Signature of OIC
 (Er Adit Rana)

Department of Civil Engineering

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Lesson Plan for Surveying-II (Semester-4th) Session: (Feb-June 2023)

S.No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	February	Week 3	14,15	Concept of contours, purpose of contouring, contour interval and horizontal equivalent, factors effecting contour interval,	
		Week 4	20,21,22	characteristics of contours, methods of contouring: Direct and indirect	
		Week 5	27,28	interpolation of contours; use of contour map, Drawing cross section from a contour map; alignment of a road on contour map,	
2	March	Week 1	1	computation of earth work and reservoir capacity from a contour map. Theodolite Surveying Working of a transit Vernier theodolite, axes of a theodolite and their relation	
		Week 2	6,7	temporary adjustments of a transit theodolite; concept of transiting, swinging, face left, face right and changing face; measurement of horizontal and vertical angles Prolonging a line (forward and backward) measurement of bearing of a line;	
		Week 3	13,14,15	Revision	Class Test - I
		Week 4	20,21,22	traversing by included angles and deflection angle method; plotting a traverse; concept of coordinate and solution of omitted measurements (one side affected), errors in the theodolite survey. Height of objects – accessible and non-accessible bases	
		Week 5	27,28,29	Tacheometry, Instruments to be used in tacheometry, methods of tacheometry stadia system of tachometry, general principles of stadia tachometry, examples of stadia tachometry and Numerical problems	
		Week 2	3,4,5	Modern Surveying Methods Definition of GIS, Components of GIS, Application areas & advantages of GIS. Introduction, working principle and various application of GPS related to Civil Engg., components of GPS – point positioning and differential positioning.	

3	April	Week 3	10,11,12	Revision	Class Test - II
		Week 4	17,18,19	Principles of electromagnetic remote sensing, remote sensing system classifications imaging characteristics, integration of remote sensing & GIS, Introduction of Total station instrument.	
		Week 5	24,25,26	Curves Simple Circular Curve: Need and definition of a simple circular curve, Elements of simple circular curve - Degree of the curve, radius (Apex point), tangent point, length, Setting out of simple circular curve (No derivations, only brief description): a) By linear measurements only: - Offsets from the tangent - Successive bisection of arcs - Offsets from the chord produced	
4	May	Week 1	1,2,3		
		Week 2	8,9,10	House Test	
		Week 3	15,16,17	b) By tangential angles using a theodolite (with numerical problems, Transition Curve: Need (centrifugal force and super elevation) and definition of transition curve; requirements of transition curve; length of transition curve for roads; by cubic parabola; calculation of offsets for a transition curve;	
		Week 4	23,24	Vertical curve brief description only 6. Computation of Areas: By Graphical & Instrumental Methods	
		Week 5	29,30,31	Areas by use of Field Notes	
5	June	Week 2	5,6,7	Revision	

Signature of Teacher
(Er Nawang Negi)

Signature of OIC
(Er Adit Rana)

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

Lesson Plan for Surveying-II (P) (Semester-4th) Session: (Feb-June 2023)					
S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	February	Week 3	16,17	I. Contouring: i) Preparing a contour plan by radial line method by the use of an Auto level/Dumpy level	
		Week 4	23,24,25	i) Preparing a contour plan by radial line method by the use of an Auto level/Dumpy level ii) Preparing a contour plan by method of squares. iii) Preparing a contour plan of a Road/Railway track/Canal by taking cross sections.	
2	March	Week 1	2,3,4	II. Theodolite: i) Taking out the Theodolite, mounting on the tripod and placing it back in the box	
		Week 2	9,10	ii) Study of a transit vernier theodolite; temporary adjustments of theodolite iii) Reading the vernier and working out the least count	
		Week 3	16,17,18	iv) Measurement of horizontal angles by repetition and reiteration methods v) Measurement of vertical angles and use of tachometric tables	
		Week 4	23,24,25	vi) Measurement of magnetic bearing of a line	
		Week 5	31	vii) Running a closed traverse with a theodolite (at least five sides) and its plotting viii) Height of objects with and without accessible bases Revision and Viva and Practical Files Checking	
		Week 1	1	III Total station i. Demonstration of total station ii. Measurement of linear distances	
		Week 2	6	iii. Measurements of included angles iv. Measurement of R.L.s of station points IV Curves	

3	April	Week 3	13	i) Setting out of a simple circular curve with given data by the following methods	
		Week 4	20,21	a) Offsets from the chords produced	
		Week 5	27,28,29	b) One theodolite method	
4	May	Week 1	4,6	V. Minor instruments: i) Demonstration and use of minor instruments like Ceylon Ghat Tracer, Tangent Clinometer, Pantagraph, Abney level.	
		Week 2	11,12	ii) Use of digital planimeter for computing area	
		Week 3	18,19,20	Revision and Viva and Practical Files Checking	
		Week 4	25,26,27	Revision and Viva and Practical Files Checking	
		Week 5		VI. Demonstration and use of GPS	
5	June	Week 1	1,2,3	Revision and Viva and Practical Files Checking	
		Week 2	8,9	Revision and Viva and Practical Files Checking	

Signature of Teacher

(Er Manoj Kumar)

(Er Nawang Negi)

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Signature of OIC
(Er Adit Rana)

Lesson Plan for Structural Mechanics (Semester-4th) Session: (Feb-June 2023)

S.No.	MONTH	WEEK	DATE	CONTENTS	REMARKS
1	Feb	Week 3	14,17	1.1 Classification of materials, elastic materials, plastic materials, ductile materials, brittle materials	
		week 4	20,21,24,25	2.1 Concept of stress, normal and shear stresses	
				2.2 Concept of strain and deformation, longitudinal and transverse strain, poisson's ratio, volumetric strain 2.3 Hooke's law, moduli of elasticity and rigidity, Bulk modulus of elasticity, relationship between the elastic constants. 2.4 Stresses and strains in bars subjected to tension and compression.	
		week 5	27,28	Extension of uniform bar under its own weight, stress produced in compound bars (two or three) due to axial load. 2.5 Temperature stresses and strains	
2	March	Week 1	3,4	3.1 Concept of a beam and supports (Hinges, Roller and Fixed), types of beams: simply supported, cantilever, propped, overhang, and continuous beams (only concept).	
		Week 2	6,7,10	3.2 Types of loads (dead load, live load, snow load, wind load seismic load as per IS Codes etc) and types of loading (point, uniformly distributed and uniformly varying loads) 3.3 Concept of bending moment and shear force, sign conventions	
		Week 3	13,14,17,18	Revision	CLASS TEST-I
		Week 4	20,21,24,25	3.4 Bending Moment and shear force diagrams for cantilever, simply supported and overhanging beams subjected to concentrated, uniformly distributed, uniformly varying load 3.5 Relationship between load, shear force and bending moment, point of maximum bending moment, and point of contraflexure 3.6 Influence Line Diagrams	
		Week 5	27,28,31	Concept of moment of inertia and second moment of area and radius of gyration, theorems of parallel and perpendicular axis, second moment of area of common geometrical sections: rectangle, triangle, circle (without derivations).	
3	April	week 1	1	Second moment of areas for shapes made of simple rectangle (L, T, Channel and I sections) only, section modulus.	
		Week 2	3,4	5.1 Concept of pure/simple bending 5.2 Assumptions made in the theory of simple bending, derivation and application of bending equation to circular cross-section, I section, T and L sections only	
		Week 3	10,11	Revision	CLASS TEST-II
		Week 4	17,18,21	5.3 Moment of resistance & modulus of rupture (bending strength) 5.4 Calculations of bending stresses in simply supported beam	
		Week 5	24,25,28,29	6.1 Concentric and eccentric load single axis eccentricity only 6.2 Effect of eccentric load on the section stresses due to eccentric loads, Numerical in the case of short columns 7.1 Concept of shear stresses in beams shear stress distribution in rectangular, circular I, T, L sections (Formula to be stated, no derivation)	
4	May	Week 1	1,2,6	8.1 Necessity for determination of slope and deflection Moment area theorem	
		week 2	8,9,12	House test	
		Week 3	15,16,19,20	Numerical problems slope and deflection, Theory of columns Eulers Formula	HOUSE TEST
		Week 4	23,26,27	Rankine Formula Numerical problems	
		Week 5	29,30	Eulers and Rankine Formula Numerical problems	
5	June	Week 1	2,3	Analysis of trusses by methods of section and joints	
		Week 2	5,6,9	Numerical problems	

Signature of Teacher
(Er Pawan Kumar)

Sign of H.O.D./OIC
(Er Adit Rana)

Department of Civil Engineering
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Lesson Plan for Structural Mechanics G-I (Semester-4th)Session: (Feb- June 2023)

S.No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	Feb	week 4	25	i) Determination of yield stress, ultimate stress, percentage elongation and plot the stress strain diagram and compute the value of young's modulus on a) Mild steel b) HYSD Steel	
2	March	week 1	4	ii) Determination of Young's modulus of elasticity for steel wire with sear's apparatus	
		week 3	18	File checking and viva	
		week4	25	iii) Determination of modulus of rupture of a concrete beam	
3	April	week 1	1	File checking and viva	
		week 4	29	iv) Determination of maximum deflection and young's modulus of elasticity in simply supported beam with load at middle third point	
4	May	week 1	6	File checking and viva	
		Week 3	20	File checking and viva	
		Week 4	27	v) Verification of forces in a framed structure	
5	June	Week 1	3	File checking and viva	




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Lesson Plan for Structural Mechanics G-II (Semester-4th) Session: (Feb-June 2023)

S.No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	Feb	week 3	17	i) Determination of yield stress, ultimate stress, percentage elongation and plot the stress strain diagram and compute the value of young's modulus on a) Mild steel b) HYSD Steel	
		week 4	24	File checking and viva	
2	March	week 1	3	File checking and viva	
		week 2	10	ii) Determination of Young's modulus of elasticity for steel wire with sear's apparatus	
		week 3	17	File checking and viva	
		week 4	24	File checking and viva	
		week 5	31	iii) Determination of modulus of rupture of a concrete beam	
3	April	Week 4	21	File checking and viva	
		Week 5	28	File checking and viva	
4	May	week 2	12	iv) Determination of maximum deflection and young's modulus of elasticity in simply supported beam with load at middle third point	
		week 3	19	File checking and viva	
		week 4	26	File checking and viva	
5	June	week 1	2	v) Verification of forces in a framed structure	
		week 2	9	File checking and viva	


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GOVT. POLYTECHNIC LAHAUL & SPITI AT UDAIPUR CAMP AT SUNDERNAGAR DISTT. MANDI(H.P.)

DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN FOR PUBLIC HEALTH ENGG. DRAWING

(SEMESTER- 4TH)

SESSION : (Feb-June 2023)

S.NO.	MONTH	WEEK	DATES	CONTENTS	REMARKS
1	Feb	WEEK 3	15,16	Cross section of earthen ware and RCC sewer pipes	
		WEEK 4	22,23	Cross section of Circular and egg shaped sewer	
2	March	WEEK 1	1,2	do	
		WEEK 2	9	Man hole and inspection chamber	
		WEEK 3	15,16	Class Test-1/Rivision	
		WEEK 4	22,23	Detailed plan and section of an inspection chamber	
		WEEK 5	29	do	
3	April	WEEK 2	5,6	Detailed plan and section of a manhole (Square only)	
		WEEK3	12,13	Septic Tank and Soak Pit	
		WEEK 4	19,20	Class Test-2/Rivision	
		WEEK5	26,27	do	
4	May	WEEK 1	3,4	Detailed plan and cross sections of a domestic septic tank with soak pit for 5-users	
		WEEK 2	10,11	House test	
		WEEK 3	17,18	Draw sectional elevation of a two storeyed building showing details of one pipe	
		WEEK 4	24,25	do	
		WEEK 5	31	do	
5	June	WEEK 1	1	Revision	

Subject Teacher

Er. Sujaya Sharma

Er. Manoj Kumar

Adit Rana
OIC

Er. Adit Rana