

LESSON PLAN

Govt. Polytechnic Lahaul & Spiti at Udaipur, Camp at Sundernagar, Distt Mandi

Name of the teacher: Alpana Chaudhary

Subject: Applied Chemistry

Session: August-December 2026

Branch: Civil Engg.

Subject: Applied Chemistry				Session: August-December2026		
Branch: Civil Engg.						
S. No.	Month	Week	Date	Name of Chapter	Content to be taught	Remarks
1	AUGUST	1st	12-08-2026	Atomic Structure	Definition of Fundamental particles(electron,proton,neutron), Bohr's theory(Postulates)	
2			14-08-2026		successes & limitations of Bohr's Theory. Atomic number,atomic mass number,isotopes,isobrs and isotones	
3		2nd	19-08-2026		orbital concept, difference between orbit and orbital	
4			21-08-2026	Shapes of s, p orbitals ,Quantum numbers(Significance only)		
5		3rd	22-08-2026		Aufbau rule ,Pauli's exclusion principle, Hund's rule of maximum multiplicity	
6			27-08-2026	Electronic configuration (Z=1 to 30)		
7		4th	29-08-2026		Concept of chemical bonding – cause of chemical bonding, types of bonds: ionic bonding (NaCl example),	
8	02-09-2026			covalent bond (H ₂ , N ₂ ,O ₂).		
9	SEPTEMBER	5th	05-09-2026		Difference between sigma and pi bond.	
			09-09-2026		class test 1	
10			11-09-2026	Solutions & Water	Definitions of solute, solvent and solution ,Methods to express the concentration of solution- molarity (M = mole per liter), molality, Normality	
11		6th	16-09-2026		Ph of solution and industrial applications of p H .	
12			18-09-2026		Definition of buffer solution and industrial applications.	
13		7th	19-09-2026		Definition of soft and hard water ,Types of hardness.	
14			23-09-2026		units of hardness(mg/L and ppm), simple numerical on water hardness	
15			25-09-2026		Disadvantages caused by hard water in domestic and industrial use.	
16	8th	26-09-2026		Removal of hardness by permutit method.Charateristics of drinking water		
17		30-09-2026	Electrochemistry and Corrosion	Electronic concept of oxidation, reduction and redox reactions,Definition of terms: electrolytes, non-electrolytes with suitable examples,		
18	OCTOBER	9th	03-10-2026		Faraday's laws of electrolysis	
19			07-10-2026		Industrial application of Electrolysis – • Electrometallurgy ,• Electroplating,Electrolytic refining	
20			09-10-2026		Introduction to Corrosion of metals – definition, Internal corrosion preventive measures – Purification, alloying and heat treatment	
		10th	14-10-2026		CLASS TEST 2	
21			16-10-2026		External corrosion preventive measures: metal (anodic, cathodic) coatings	
22		11th	17-10-2026	Engineering Materials & Polymers	Natural occurrence of metals – minerals, ores of iron, aluminium and copper, gangue (matrix), flux, slag.	
23			21-10-2026		Definitions of metallurgy, Pyrometallurgy,Electrometallurgy,Hydrometallurgy general principles of metallurgy(a).Crushing and grinding (b) Concentration of ore (Froth flotation)	
24	23-10-2026			(c) Extraction(Roasting and calcinations & smelting),(d) Refining (Electro refining)		

25	N O V E M B E R	12th	24-10-2026		Extraction of - iron from haematite ore using blast furnace along with reactions.	
26			28-10-2026		Alloys – definition, purposes of alloying, ferrous and non-ferrous alloys	
27			30-10-2026		Definitions of Polymer, Monomer, degree of polymerization. Name of monomer and reactions involving preparation of Polythene, PVC,	
28		13th	31-10-2026		Name of monomer and reactions involving preparation of PTFE, PS AND Nylon -6,6	
			1st week Nov.		HOUSE TEST	
29			06-11-2026	Fuels & Lubricants	Definition of fuel and combustion of fuel, classification of fuels, Characteristics of good fuel	
30		14th	3 days		DIWALI VACATION	
31			13-11-2026		calorific values (HCV and LCV), calculation of HCV and LCV using Dulong's formula	
32		15th	18-11-2026		Petrol and diesel - fuel rating (octane and cetane numbers), Chemical composition	
33			20-11-2026		Calorific values and applications and diagram of water gas, producer gas and biogas.	
34		16th	21-11-2026		Calorific values and applications and diagram of biogas.	
35			25-11-2026		Definition and Functions of lubricant.	
36			27-11-2026		Physical properties (viscosity and viscosity index, flash and fire point)	
37			28-11-2026		Chemical properties (total acid number, saponification value) of lubricants.	

Signature of the teacher

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Govt. Polytechnic Lahaul & Spiti at Udaipur Camp at Sunder Nagar Distt. Mandi (H.P.) 175018

Lesson Plan : Aug.2026 to Nov.2026

Name of the Teacher : Suniti Rani

Subject : Mathematics -I

Branch : Civil Engineering Semester : First

S. No.	Month	Date	Week	Unit	Name of Chapter	Content to be taught	Remarks
1	AUGUST	10,12,14	1st	Trigonometry	Angles and Its Measurement	Measurement of angles in three system & conversions(Ex-1.1)	
2		17,19,21, 22	2nd	Do	T-Ratio of Allied Angles, Addition and Subtraction Formule, Transformation of Products into sum or difference	Exercise 2.1 , Exercise-3.1	
3		24,26,29	3rd	Do	Transformation of Products into sum or difference and vice versa	Exercise-3.1 & Exercise -4.1	
4	SEPTEMBER	31,2,5	4th	Do	T-Ratio of multiple & Sub-multiple angles, Graphs of Trigonometrical Functions	Exercise-5.1 & Graphs of $\sin x$ & $\cos x$	
5		7,9,11	5th	Differential Calculus	Functions and Limits & Revision of some important questions	Exercise-1.1 CLASS TEST -1	
6		14,16,18, 19	6th	Differential Calculus	Functions and Limits	Exercise-1.2 & Exercise-1.3	
7		21,23,25, 26	7th	Do	Differentiation	Diff. of a Function by 1st Principle($\sin x$ & $\cos x$), Imp. Formulae, Exercise-2.2	
8	SEPTEMBER / OCTOBER	28,30,3	8th	Do	Differentiation	Diff. of sum, product & quotients of functions and Diff. of fun.of fun. (Ex-2.2)	
9		5,7,9	9th	Do	Differentiation	Inverse Trig. Function Exercise 2.3 & Revision CLASS TEST-2	
10		12,14,16, 17	10th	Do	Differentiation	Inverse Trig. Function Exercise 2.3 Logarithmic Differentiation Exercise-2.6	
11		19,21,23, 24	11th	Complex Numbers and Partial Fractions	Complex Numbers	Complex Nos. & Conjugate of Comp. No.(Exercise-1.1) Modulus of Comp.No. & Amplitude of Comp. No., Polar Form, Exercise-1.2	

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		28,30,31	12th	Do	Complex Numbers and Partial Fractions	Exercise-1.2 , Exercise-2.1 & Exercise-2.2	
13	NOVEMBER	2,4,6,7	13th	Revision	Revision of Some Important Questions	HOUSE TEST	
14		13	14th	Permutations & Combinations	Permutations , Combinations & Binomial Theorem	Exercise-3.1	
15		16,18,20,21	15th	Do	Permutations , Combinations & Binomial Theorem	Exercise-3.2, Exercise-3.3, Expansion of Binomial Theorem , Gen. Term ,Middle Term (Exercise-4.1)	
16		23,25.17,28	16th	Do	Binomial Theorem	Constant Term & find the Coefficients, Binomial Theorem for any Index (Exercise-4.2)	

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Teacher's Signature
Suniti Rani (Lect. Mathematics)

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Applied Science & Humanity

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

Department of Applied Sciences and Humanities

Lesson Plan for Applied Physics-I (Semester-1st) Session: (August-November 2026)

S.No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	Aug	Week 1	1	Induction Programme	
		Week 2	3,5	Induction Programme	
		Week 3	10,12	Unit 1: Units and Dimensions Physical quantities - fundamental and derived quantities, System of units: CGS, FPS, MKS, SI,	
		Week 4	17,19,22	dimensional formulae and SI units of physical quantities - displacement, area, volume, density, velocity, acceleration, linear momentum, force, work, power, energy, pressure, stress & strain,	
		Week 5	24,26,29	Principle of homogeneity of dimensions, Application of dimensional analysis: checking the correctness of physical equation (three equations of motion)	
		Week 6	31	Errors, Types of errors - Instrumental, Systematic, Random and Gross error.	
2	Sept	Week 1	2,5	Unit 2: Force and Motion Scalar and vector quantities – definition and examples, representation of vector, types of vectors (equal vectors, negative vectors, unit vectors, co-initial vectors, co-planar vectors),	Class Test-I
		Week 2	7,9	linear momentum, law of conservation of linear momentum with derivation	
		Week 3	14,16,19	angular displacement, angular velocity, angular acceleration, relation between linear and angular velocity, torque, angular momentum	
		Week 4	21,23,26	law of conservation of angular momentum and its applications, moment of inertia and its physical significance.	
		Week 5	28,30	Unit 3: Work, Power, and Energy Work and types of work (zero work, positive work and negative work) with examples, Energy - definition and its SI unit, examples of transformation of energy	
		Week 1	3	Kinetic energy - definition, examples, formula and its derivation, Potential energy - definition, examples, formula and its derivation,	Class Test-II
		Week 2	5,7	Law of conservation of mechanical energy for freely falling bodies (with derivation), Power and simple numerical problems based on Power.	

	Oct	Week 3	12,14,17	Unit 4: Properties of Matter and plasticity - definition, Definition of stress and strain, Types of stress and strain, Hooke's law, Elasticity
		Week 4	19,21, 24	Modulus of elasticity and its types, Pressure - definition, atmospheric pressure, gauge pressure, absolute pressure.
		Week 5	28,31	Unit 5: Heat and Temperature heat and temperature (on the basis of kinetic theory), Difference between heat and temperature, Definition of
	4 Nov	Week 1	2,4,7	HOUSE TEST
		Week 2	9,11	Modes of transfer of heat- conduction, convection and radiation with examples.
		Week 3	16,18,21	Different scales of temperature and their relationship, Numerical problems based on conversion of temperature into various scales.
		Week 4	23,25, 28	Revision



Signature of Teacher
(Raman Jamwal)



Signature of H.O.D
(Sh. Raman Jamwal)

Government Polytechnic Lahaul Spiti at Udaipur Camp at Sundernagar Distt Mandi (H.P) -175018
Department of Applied Sciences and Humanities

Lesson Plan for Applied Mechanics (Semester-1st) Session: (Aug.-Dec. 2026)

S.No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	Aug	Week 2	13,14	Introduction -Mechanics,applied mechanics,statics,dynamics(kinetics) particle,utility of mechanics in engineering fields.	
2		Week 3	20,21,22	Flexible body and rigid body,Scalar and vector quantity,Laws of forces-definition of force,measurement of force in SI units,its representation ,effectsof force,characteristics of a force,free body,free body diagram,	
3		Week 4	27,29	force systems and its classification,principle of transmissibility,law of superposition,resultant forceparallelogram law of forces(with derivation)	
4	Sept.	Week 1	3,5	triangle law of forces,polygon law of forces-analytically,resolution of forces,resolution of a force into two components only	
5		Week 2	10,11	Basic numerical problems,concept of moment,moment of a force and units of moment,Class Test-I,	
6		Week 3	17,18,19	Varignon's theorem(definition only),equilibrium,equilibrant,general conditions of equilibrium,Lami's theorem,determine resultant and its position in parallel force system(like and unlike parallel forces)under coplanar forces	
7		Week 4	24,25,26	Basic numerical problems,Friction and its relevance in engineering,types and laws of friction,limiting equilibrium,limiting friction,coefficient of friction,angle of friction ,angle of repose and their relations.	
8	Oct.	Week 1	1,3	Equilibrium of bodieson level surfacesubjected to force parallel and inclined to plane,equilibrium of bodies on inclint plane subjected to force parallel to the plane only.	
9		Week 2	8,9	Basic Numerical problems, Class Test-II	
10		Week 3	15,16,17	Definition of centroid ,centre of gravity ,axis of symmetry,reference axis,centroid of plane figures-square,rectangle,triangle,circle,semi-circle(wit hout derivation),determination of centroid of lamina T,L & Ishape	
11		Week 4	22,23,24	centriod of composite plane figures with/without removed portion(Combination of only two plane figures) using the moment method only.determination of centre of gravity of symmetrical solid bodies -cube,cuboid,cone,cylinder sphere and hemisphere(without derivation)	
12		Week 5	30,31	Definition of machine,simple machine,load,effort,velocity ratio,mechanical advantage and efficiency of a machine and their relationship	

13	Nov.	Week 1	5,6,7	House Test	
14		Week 2	12,13	Law of machines, definition of ideal machine, reversible and self locking machine.	
15		Week 3	19,20,21	Mechanical advantages, Velocity ratio, efficiency of simple wheel and axle, simple screw jack, worm and worm wheel, single winch crab	
16		Week 4	26,27,28	Basic Numerical Problems	


Signature of Teacher
 (Manisha Pathania)


Signature of H.O.D
 (Sh. Raman Jamwal)

LESSON PLAN

Govt. Polytechnic Lahaul &Spiti at Udaipur,Camp at Sundernagar , Distt Mandi

Name of the teacher: Alpana Chaudhary

Subject: Applied Chemistry Lab

Branch:Civil Engg.

Session: August-December2026

S.No.	Name of experiment	Proposed date of experiment	Actual Date	Proposed date of experiment	Actual Date	Remarks
		G-A		G-B		
1	Introduction to chemistry lab chemicals& equipments	10-08-2026		11-08-2026		
2	Preparation of standard solution of oxalic acid.	17-08-2026		18-08-2026		
3	To determine strength of solution by titrating against standard oxalic acid solution using phenolphthalein as indicator.	31-08-2026		01-09-2026		
4	Experimental verification of Faraday's first law of electrolysis using copper sulfate solution and copper electrode.	07-09-2026		08-09-2026		
5	Determination of p H by p H meter.	14-09-2026		15-09-2026		
6	To estimate total alkalinity of given water sample by titrating it against standard Sulphuric acid.	28-09-2026		29-09-2026		
7	To estimate moisture in given coal sample gravimetrically.	12-10-2026		06-10-2026		
8	To estimate ash in given coal sample gravimetrically.	19-10-2026		13-10-2026		
9	To compare the viscosity of given lubricating oils by Redwood viscometer.	16-11-2026		27-10-2026		
10	Revision/viva	24/8/26,21/9/26, 5/10/26,19/10/26,23/11/26		25/8/26,22/9/26,17/11/26		

Signature of the teacher

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

Department of Applied Sciences and Humanities

Lesson Plan for Applied Mechanics Lab(Semester-1st) Session: (Aug-Dec 2026)

S.No.	MONTH	WEEK	Group	Date	CONTENTS	REMARKS
1	Aug	Week 2	1	13	Introduction, Syllabus Overview, Evaluation scheme	
			2	14	Introduction, Syllabus Overview, Evaluation scheme	
2		Week 3	1	20	Verification of polygon law of forces graphically using universal force table/gravesend's apparatus.	
			2	21	Verification of polygon law of forces graphically using universal force table/gravesend's apparatus.	
3		Week 4	1	27	Viva/Practical file checking	
4	Sept.	Week 1	1	3	verification of lami's theorem.	
5		Week 2	1	10	Viva/Practical file checking	
			2	11	Viva/Practical file checking	
6		Week 3	1	17	Study forces in various members of Jib crane.	
			2	18	verification of lami's theorem.	
7		Week 4	1	24	Viva/Practical file checking	
			2	25	Study forces in various members of Jib crane.	
8		Oct	Week 1	1	1	
9	Week 2		1	8	To verify relation between angle of friction and angle of repose on inclined plane.	
			2	9	Determine coefficient of friction and angle of friction on horizontal plane for two or three different contact surfaces.	
10	Week 3		1	15	To find out centre of gravity of a regular & irregular lamina.	
			2	16	To verify relation between angle of friction and angle of repose on inclined plane.	
11	Week 4		1	22	To find the M.A., V.R., Efficiency of a worm and worm wheel.	
			2	23	To find out centre of gravity of a regular & irregular lamina.	
12	Week 5		2	30	To find the M.A., V.R., Efficiency of a worm and worm wheel.	
13	Nov	Week 1	1	5	House test	
			2	6		
14		Week 2	1	12	To find the M.A., V.R., Efficiency of a simple screw jack.	
			2	13	To find the M.A., V.R., Efficiency of a simple screw jack.	
15		Week 3	1	19	To find the M.A., V.R., Efficiency of a single winch crab.	
			2	20	To find the M.A., V.R., Efficiency of a single winch crab.	
16		Week 4	1	26	Viva/Practical file checking	
			2	27	Viva/Practical file checking	



Signature of Teacher
(Manisha Pathania)



Signature of H.O.D
(Sh. Raman Jamwal)

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

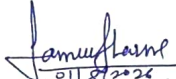
Department of Applied Sciences and Humanities

Lesson Plan for Engineering Graphics (Semester-1st) Session: (August-November 2026)

S.No.	MONTH	WEEK	Date	CONTENTS	REMARKS
1	Aug	Week 1	1	Induction Programme	
		Week 2	3,4	Induction Programme	
		Week 3	10,11	Introduction, Overview of syllabus, Evaluation scheme, Introduction to Engineering Drawing :Introduction to engineering drawing instruments and materials; standard drawing sheet layouts and sizes (ISO A-series); standard sizes of drawing boards, Convention of lines and their applications in the Engineering Drawing as per BIS specifications.	
		Week 4	17,18,22	Practice of vertical, horizontal and inclined lines; geometrical figures such as triangles,rectangles, circles, ellipses and curves; hexagon and pentagon with the help of drawing instruments.	
		Week 5	24,25,29	Freehand and instrumental lettering (alphabets and numerals) – free hand lettering (5,8 and 12 mm); instrumental lettering of upper-case Gothic, single stroke, vertical with height 25 to 35 mm and in the ratio of 7:4.	
		Week 6	31	Dimensioning Techniques : Necessity and principles of dimensioning, dimensioning techniques: elements of dimensioning.	
2	Sept	Week 1	1,5	Dimensioning methods and arrangement of dimensions in accordance with BIS standards.Dimensioning of: Overall sizes, Circles, Chamfered surfaces, Angles, Tapered surfaces, Holes equally spaced on P.C.D.	Class Test-I
		Week 2	7,8	Engineering Scales – their need and importance; types of scales; definition of R.F. and length of scale.Concept, applications and construction of plain scales.	
		Week 3	14,15,19	Concept, applications, and construction of diagonal scales.	
		Week 4	21,22,26	Orthographic Projections :Theory of orthographic projections: concept and applications,Projection of points in different quadrants, Projection of straight lines (1st and 3rd angle): Line parallel or perpendicular to reference planes. (theoretical concept only and be excluded from assessment).	
		Week 5	28,29	Three views of orthographic projection of objects (minimum one sheet in 3rd angle).	
3	Oct	Week 1	3	Three views of orthographic projection of objects (minimum one sheet in 3rd angle).	Class Test-II
		Week 2	5,6	Sectioning : Sectioning: Conventional representation of materials; breaks for shafts, pipes,rectangular, square, angle, channel and rolled sections.	

CAMP Sports

3	Oct	Week 3	12,13,17	Orthographic sectional views: Full, and Half, Introduction to Partial/Broken-out, Removed sections.
		Week 4	19,24	Isometric Views :Fundamentals of isometric projections and isometric scale (theory)Isometric views of combinations of regular solids: cylinder, cone,cube, prism.
		Week 5	27,31	Isometric Views :Fundamentals of isometric projections and isometric scale (theory)Isometric views of combinations of regular solids: cylinder, cone,cube, prism.
4	Nov	Week 1	2,3,7	HOUSE TEST
		Week 2	9,10	Common Signs, Symbols & Conventions : Importance of engineering symbols, conventions, and their applications,Freehand sketching of standard Civil engineering symbols and conventions.
		Week 3	16,17,21	Freehand sketching of standard Electrical, and Mechanical engineering symbols and conventions.
		Week 4	23,28	Revision


 01/08/2026
Signature of Teacher
 (Er Sameer Sharma)


Signature of H.O.D
 (Sh. Raman Jamwal)

GOVT POLYTECHNIC LAHAUL & SPITI AT UDAIPUR

Camp at Sundernagar, Distt. Mandi(HP)

Lesson Plan : Yoga & Sports

Name of the Teacher : Gopal Dass

Branch : Civil. Engg.

Semester: 1st

Session : (Aug - Nov. 2026)

Month	Week	Date	Name of the Chapter	Contents to be taught	Remarks
Aug.	1st	6,7,	Module 1: Physical Fitness	Induction Programm	
	2nd	13,14		This module emphasizes the development of physical fitness through activities such as warm□up, stretching, flexibility, endurance, strength exercises, cool-down	
	3rd	20,21			
	4th	27			
Sept.	1st	3,5	Module 2: Yoga	The module on yoga may include loosening exercises, Surva Namaskar.	
	2nd	10,11		Class Test 1	
	3rd	17,18		Asanas (standing, sitting, prone and supine) Asanas (standing, sitting, prone and supine)	
	4th	24,25		Pranayama, Meditation, relaxation techniques.	
Oct.	1st	1	Module 2: Yoga	Pranayama, Meditation, relaxation techniques.	
	2nd	8,9	Module 3: Sports Activities	Class Test 2	
	3rd	15,16		Students may participate in games such as Volleyball, Basketball, Badminton, Table Tennis,	
	4th	22,23			
	5 th	29,30			
Nov.	1st	5,6	Module 3: Sports Activities	House Test	
	2nd	12,13		Athletics, Kabaddi, Kho-Kho.	
	3rd	19,20,			
	4th	27,28			

Subject Teacher:- Gopal Dass

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