

PLANNED SYLLABUS COVERAGE (Theory)

Lahaul & Spiti (H.P.)
Campus at Sundernagar Distt. Mandi

2328

Govt.
Polytechnic
Lahaul Spiti

Department: Applied Sciences

Subject :Applied Physics-I

Course - Diploma

Duration - 14 weeks

SYLLABUS

Total Periods - 42+14 (DCS)=56

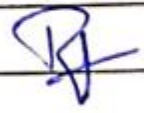
Theory - 42+14 (DCS)=56 hours

S.N.	Period Nos	Topic	Details	Instruction references	Additional Study Recommended	Remarks
1	1 to 9 (L-7 DCS-2)	1. Physical world, Units and Measurements	Physical quantities: fundamental and derived, Units and systems of units (FPS, CGS and SI units), Dimensions and dimensional formulae of physical quantities, Principle of homogeneity of dimensions, Dimensional equations and their applications, conversion from one system of units to other, Checking of dimensional equations Derivation of simple equations Limitations of dimensional analysis. Errors in measurements (systematic and random), absolute error, relative error, Error estimation and significant figures	Text Book of Physics for Class XI & XII (Part-I, Part-II) NCERT Delhi, Applied Physics-I by Eagle Prakashan	Engineering Physics by PV Naik, Pearson Education Pvt. Ltd, New Delhi	
2	10 to 19 (L-7 DCS-3)	2. Force and Motion	Scalar and Vector quantities - examples, representation of vector, types of vectors. Addition and Subtraction of Vectors, Triangle and Parallelogram law (Statement only) Scalar and Vector Product, Resolution of a Vector and its application to inclined plane (Rectangular components) and lawn roller. Force, Momentum, Statement and derivation of conservation of linear momentum Applications such as recoil of gun & rockets, Impulse and its applications Circular motion, definition of angular displacement, angular velocity, angular acceleration, frequency, time period. Relation between linear and angular velocity, Relation between linear acceleration and angular acceleration (related numerical), Centripetal and Centrifugal forces with live examples Expression and applications such as banking of roads and bending of cyclist			
3	20 to 28 (L-7 DCS-2)	3. Work, Power and Energy	Concept and units, examples of zero work, positive work and negative work Friction: concept, types Laws of limiting friction, coefficient of friction, methods for reducing friction and its engineering applications Work done in moving an object on horizontal and inclined plane for rough and plane surfaces and related applications. Energy and its units, kinetic energy, gravitational potential energy with examples and derivations, Mechanical energy, conservation of mechanical energy for freely falling bodies Transformation of energy (examples). Power and its units Power and work relationship, calculation of power (numerical problems)			

4	29 to 37 (L-7 DCS-2)	4. Rotational Motion	<p>Translational and rotational motions with examples. Definition of torque and angular momentum and their examples. Conservation of angular momentum (quantitative) and its applications. Moment of inertia and its physical significance, radius of gyration for rigid body Theorems of parallel and perpendicular axes (statements only). Moment of inertia of rod, disc, ring and sphere (hollow and solid): (Formulae only) Numericals on rotational motion.</p>			
	38 to 47 (L-7 DCS-3)	5. Properties of Matter				
	48 to 56 (L-7 DCS-2)	6. Heat and Thermometry				
5			<p>Elasticity: Definition of stress and strain, types Different types of moduli of elasticity, Hooke's law, significance of stress-strain curve Pressure: definition, units, atmospheric pressure, gauge pressure, absolute pressure, Fortin's Barometer and its applications. Surface tension: concept, units, cohesive and adhesive forces, angle of contact, Ascent Formula (No derivation) Applications of surface tension, effect of temperature and impurity on surface tension.</p>			
6			<p>Concept of heat and temperature. Modes of heat transfer (conduction, convection and radiation with examples) Scales of temperature and their relationship, Types of Thermometer Mercury thermometer, bimetallic thermometer Platinum resistance thermometer, Pyrometer Expansion of solids, liquids and gases, Co-efficient of thermal conductivity Coefficient of linear, surface and cubical expansions and relation amongst them</p>			

Teacher Sig.



APPROVED	SIGN HOD
DATE:- 16/07/2025	

GOVT POLYTECHNIC LAHAUL & SPITI at Udaipur, camp at Sundernagar, Distt. Mandi (HP)

LESSON PLAN (Applied Physics I Practicals)

Name of the Teacher - Manisha Pathania

Branch: Civil. Engg. (1st Aug 2025 - 26th Nov. 2025) Sem:- Ist

Politechnic Udaipur
(Lahaul & Spiti (H.P.)
Campus at Sundernagar Distt. Mandi

Roll No. 2339

01/08/25

Signature

Sr.No.	Description of Practicals	Planned Dates		Remarks
		Group-I	Group-II	
1	To measure length, radius of a given cylinder, at least tube and a beaker using a vernier caliper and find volume of each object.	Week - 1 14th Aug	Week - 1 12th Aug	
2	To determine diameter of a wire, a solid ball and thickness of cardboard using a screw gauge.	Week - 2 21st Aug	Week - 2 19th Aug	
3	Revision & Viva	Week - 3 28th Aug	Week - 3 26th Aug	
4	To determine radius of curvature of a convex and a concave mirror/surface using a spherometer.	Week - 4 4th Sept	Week - 4 2nd Sept	
5	To verify triangle and parallelogram law of forces.	Week - 5 11th Sept	Week - 5 9th Sept	
6	Revision & Viva	Week - 6 18th Sept	Week - 6 16th Sept	
7	To determine force constant of a spring using Hook's Law.	Week - 7 25th Sept	Week - 7 23rd Sept	
8	To verify law of conservation of mechanical energy (PE to KE)	Week - 8 9th Oct.	Week - 8 14th Oct	
9	Revision & Viva	Week - 9 16th Oct	Week - 9 21st Oct	
10	To find moment of Inertia of a flywheel.	Week - 10 30th Oct	Week - 10 28th Oct	
11	To measure room temperature and temperature of a hot bath using mercury thermometer and convert it into different scales.	Week - 11 6th Nov.	Week - 11 4th Nov	
12	Revision & Viva	Week - 12 20th Nov	Week - 12 18th Nov	

Teacher : Manisha Pathania
Sr.Lecturer(AS&H)

HOD
(AS&H)

LESSON PLAN

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

Name of the Teacher: Alpna Chaudhary

Subject: Applied Chemistry

Branch: Civil Engg.

Session: August-December 2025

S. No.	Month	Week	Date	Name of Chapter	Content to be taught	Remarks
1	A U G U S T	1st	08-08-2025	Atomic Structure	Fundamental particles (electron, proton, neutron),	
2			12-08-2025		Bohr's theory, successes & limitations	
3		2nd	13-08-2025		Heisenberg uncertainty principle, orbital concept, difference between orbit and orbital	
4			19-08-2025		Quantum numbers	
5		3rd	20-08-2025		Shapes of s, p orbitals, Pauli's exclusion principle,	
6			22-08-2025		Hund's rule of maximum multiplicity, Aufbau rule, electronic configuration (Z=1 to 30)	
7		4th	23-08-2025	Chemical Bonding and Solutions	Concept of chemical bonding - cause of chemical bonding, types of bonds: ionic bonding (NaCl example),	
8			26-08-2025		Lewis concept of covalent bond (H_2 , F_2 , HF), Electronegativity,	
9		5th	27-08-2025		Difference between sigma and pi bond, Electron sea model of metallic bond	
10			29-08-2025		Idea of solute, solvent and solution, Methods to express the concentration of solution- molarity (M = mole per liter), molality, mass percentage	
11	S E P T E M B E R	6th	30-08-2025	Electrochemistry and Corrosion	Electronic concept of oxidation, reduction and redox reactions, Definition of terms: electrolytes, non-electrolytes with suitable examples,	
12			02-09-2025		Faraday's first law of electrolysis and simple numerical problems	
13		7th	03-09-2025		Faraday's second law of electrolysis and simple numerical problems	
14			05-09-2025		Industrial application of Electrolysis - * Electrometallurgy, * Electroplating, Electrolytic refining	
15		8th	06-09-2025		Revision	
16			09-09-2025		CLASS TEST 1	
17		9th	10-09-2025		primary cell - dry cell, Secondary cell - commercially used lead acid storage battery.	
18			12-09-2025		Introduction to Corrosion of metals - definition, types of corrosion (electrochemical), H_2 liberation and O_2 absorption mechanism of electrochemical corrosion	
19		10th	17-09-2025		Internal corrosion preventive measures - Purification, alloying and heat treatment	
20			19-09-2025		External corrosion preventive measures: metal (anodic, cathodic) coatings	
21	O C T O B E R	11th	20-09-2025	Engineering Materials	Natural occurrence of metals - minerals, ores of iron, aluminium and copper, gangue (matrix), flux, slag.	
22			23-09-2025		general principles of metallurgy (a) Crushing and grinding (b) Concentration of ore (Levigation, Froth flotation, Magnetic separation,	
23		12th	24-09-2025		(c) Extraction/ Roasting and calcinations & smelting, (d) Refining (Electro refining, zone refining)	

Govt. Polytechnic Udaipur
Lahaul & Spiti (H.P.)
Camp at Sundernagar Distt. Mandi

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24				Extraction of Iron from haematite ore using blast furnace along with reactions.	
25				Alloys – definition, purposes of alloying, ferrous alloys (mild steel) and non-ferrous (Aluminum & Bronze)	
26			Water	Classification of soft and hard water based on soap test, salts causing water hardness, Cause of poor lathering of soap in hard water.	
27				units of hardness (mg/L and ppm), simple numerical on water hardness	
28				Problems caused by the use of hard water in boiler (scale and sludge, foaming and priming, corrosion.)	
29				water softening techniques- i) zeolite process	
30				ii) Municipal water treatment (in brief only) – sedimentation, coagulation, filtration, sterilization	
31	O			Revision	
32	C	11th		CLASS TEST 2	
33	T			Diwall Break	
34	O	12th		Properties of water used for human consumption for drinking and cooking purposes from any water sources and Indian standard specification of drinking water	
35	E		Fuels	Definition of fuel and combustion of fuel, classification of fuels, Characteristics of good fuel	
36	R	13th		calorific values (HCV and LCV), calculation of HCV and LCV using Dulong's formula	
37				Petrol and diesel - fuel rating (octane and cetane number), Chemical composition	
38				Calorific values and applications of LPG, CNG, water gas, producer gas and biogas.	
39		14th	Lubrication	Function and characteristic properties of good lubricant classification with examples	
40				Lubrication mechanism; hydrodynamic and boundary lubrication	
41	O	15th		Physical properties (viscosity and viscosity index, oiliness, flash and fire point, cloud and pour point	
42	C			HOUSE TESTS	
43	T	2nd week Nov.		Chemical properties (coke number, total acid number, saponification value) of lubricants.	
44	/	14-11-2025		Monomer, homo and co polymers, degree of polymerization,	
45	N	15-11-2025	Polymer	Thermoplastics and thermosetting plastics (using Polythene, PVC)	
46	O	16th		PS, PTFE, nylon-6,6 and Bakelite ,	
47	V	18-11-2025		Vulcanization of rubber and properties of vulcanised rubber	
48	E	19-11-2025		revision	
49	M	21-11-2025		revision	
50	B	22-11-2025		revision	
	E	25-11-2025		revision	
	R	26-11-2025		revision	

Signature of the teacher

Shyam

HOD/CHEM
(AS&H)

(Ramen Tamir)

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-December 2025

S.No.	Name of experiment	G-A		G-B		Remarks
		Proposed date of experiment	Actual Date	Proposed date of experiment	Actual Date	
1	Introduction to chemistry lab chemicals & equipments	12-08-2025		11-08-2025		
2	Preparation of standard solution of oxalic acid.	19-08-2025		18-08-2025		
3	To determine strength of solution by titrating against standard oxalic acid solution using phenolphthalein as indicator.	02-09-2025		01-09-2025		
4	Experimental verification of Faraday's first law of electrolysis using copper sulfate solution and copper electrode.	09-09-2025		08-09-2025		
5	Iodometric estimation of Copper in the given Copper ore using standard Hypo solution.	23-09-2025		22-09-2025		
6	OR To estimate total alkalinity of given water sample by titrating it against standard Sulphuric acid.	30-09-2025		29-09-2025		
7	To estimate moisture in given coal sample gravimetrically.	14-10-2025		13-10-2025		
8	To estimate ash in given coal sample gravimetrically.	04-11-2025		03-11-2025		
9	To determine viscosity of given lubricating oil by Redwood viscometer.	18-11-2025		17-11-2025		
10	Revision/viva	26/8/25, 28/10/25, 25/11/25		25/8/25, 15/9/25, 6/10/25, 27/10/25, 24/11/25		

Signature of the teacher

Alpana

HOD/DIC
(AS&H)

AS&H

Govt. Polytechnic Udaipur
Lahaul & Spiti (H.P.)
Camp at Sundernagar Distt. Mandi

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22/08/25

Govt. Polytechnic L&S at Udaipur Camp.at Sundernagar

Name of the Teacher :Manisha Pathania

Subject : Sports & Yoga (HS103)

Branch : Civil Engg. Semester : 1st Sem.

(1st Aug. 2025 - 26th Nov. 2025)

Date of Sports (H.P.)
 Campus at Sundernagar Distt. Mandi
 Date No. 2343
 02/08/25
 PPL
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S.No.	Month	Week	Name of Chapter	Content to be taught	Remarks
1	August	1st	Introduction to Physical Education	Meaning & Def., Aims & Objectives of Physical Education & Changing trends in Phy. Edu.	
2		2nd	Olympic Movement	Ancient & Modern Olympics, Olympic Symbols, ideals, objectives & Values, Awards & Honours in Sports in India	
3		3rd	Physical Fitness, Wellness & Lifestyle	Meaning & Imp. Of Physical Fitness & Wellness, components of physical fitness, preventing health threats through lifestyle changes, Concepts of Positive Lifestyle	
4	September	4th	Fundamentals of Anatomy, Physiology and Kinesiology, Biomechanics & Sports	Define Anatomy, Physiology & Its Importance and Meaning & Importance of Kinesiology & Biomechanics in Physical Edu. & Sports	
5		5th	Postures & Yoga	Meaning, Concept & Advantages of Postures, Meaning & Imp. of Yoga, Introduction - Asanas, Pranayama, Meditation & Yogic Kriyas	
6		6th	Yoga & Lifestyle	Asanas as preventive measures - For Hypertension, Obesity, Back Pain, Diabetes & Asthma.	
7		7th	Training & Planning in Sports	Meaning of Training, Meaning and Objectives of Planning. Warming up & limbering down. Skill, Techniques & Style	

8	October	8th & 9th	Psychology & Sports	Def. & Imp. of Psychology . Define Growth & Development, Adolescent Problems & Their Management, Psychological benefits of exercise.	
9		10th & 11th	Psychology & Sports	Emotions: Concept, Type & Controlling of Emotions. Anxiety & Fear and its effects on Sports Performance. Understanding Stress & Coping Strategies.	
10		12th	Sports Medicine	First Aid, Sports Injuries & Management of Injuries.	
12		13th & 14th	Doping	Meaning & Concept of Doping. Prohibited Substances & Methods. Side Effects of Prohibited Substances.	
13		15th	Sports / Games	History of the Game / Sport. Latest General Rules of the Game / Sport.	

Manisha

Teacher's Signature:

Manisha Pathania, Sr. Lecturer (AS&H)

Manisha
HOD
(AS&H)

Govt. Polytechnic L&S at Udaipur Camp at Sundernagar, Distt. Mandi (H.P.)

Planning of Practical Contents for the Period 11th August 2025 to 25th November 2025

Departments: - Applied Sciences and Humanities

PPL

8hrs/week

Course: - Diploma (Civil Engg.)

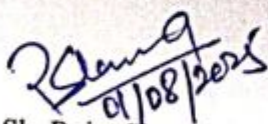
Subject: Introduction to Information Technology System Lab (ES-108)


Credit: -2

Date	Content Planned	Group	Week	Remarks
11/08/2025	1. To identify various hardware Components on Computer System.	1	1	
11/08/2025	1. To identify various hardware Components on Computer System.	2	1	
12/08/2025	Revision 1 st Practical.	2	1	
12/08/2025	Revision 1 st Practical.	1	1	
18/08/2025	2. To assemble hardware components of Computer System.	1	2	
18/08/2025	2. To assemble hardware components of Computer System.	2	2	
19/08/2025	Revision 2nd Practical.	2	2	
19/08/2025	Revision 2nd Practical.	1	2	
25/08/2025	3. To install Window OS on Computer System.	1	3	
25/08/2025	3. To install Window OS on Computer System.	2	3	
26/08/2025	Revision 3rd Practical.	2	3	
26/08/2025	Revision 3rd Practical.	1	3	
01/09/2025	4. To study various features offered on the desktop, creating new folder and new file on the desktop.	1	4	
01/09/2025	4. To study various features offered on the desktop, creating new folder and new file on the desktop.	2	4	
02/09/2025	Revision 4th Practical.	2	4	
02/09/2025	Revision 4th Practical.	1	4	
08/09/2025	5. To work on different web browser (Google Chrome, Internet Explorer) setting up default Homepage on browser and study various setting available.	1	5	
08/09/2025	5. To work on different web browser (Google Chrome, Internet Explorer) setting up default homepage on browser and study various setting available.	2	5	
09/09/2025	Revision 5th Practical.	2	5	
09/09/2025	Revision 5th Practical.	1	5	
15/09/2025	6. To open search engine (Google and Yahoo)	1	6	

	search different information using the search engine. Creating an email account.			
15/09/2025	6. To open search engine (Google and Yahoo) search different information using the search engine. Creating an email account.	2	6	
16/09/2025	Revision 6th Practical.	2	6	
16/09/2025	Revision 6th Practical.	1	6	
22/09/2025	7. Visit Various e-governance/digital India portals and understanding service offered.	1	7	
22/09/2025	7. Visit Various e-governance/digital India portals and understanding service offered.	2	7	
23/09/2025	Revision 7th Practical.	2	7	
23/09/2025	Revision 7th Practical.	1	7	
29/09/2025	8. Opening, creating and saving a document, locating files, copying contents in some different file(s), protecting files, giving password protection for a file, setting margins, tab setting, ruler, indenting, entering text, cut, copy, paste using tool- bars.	1	8	
29/09/2025	8. Opening, creating and saving a document, locating files, copying contents in some different file(s), protecting files, giving password protection for a file, setting margins, tab setting, ruler, indenting, entering text, cut, copy, paste using tool- bars.	2	8	
30/09/2025	Revision 8th Practical.	2	8	
30/09/2025	Revision 8th Practical.	1	8	
06/10/2025	9. Formatting a document, Creating and editing tables, mail-merge	1	9	
06/10/2025	9. Formatting a document, Creating and editing tables, mail-merge.	2	9	
13/10/2025	Revision 9th Practical.	1	10	
13/10/2025	Revision 9th Practical.	2	10	
14/10/2025	10. Working on MS – EXCEL- Creating a Worksheet in Excel. Copy, Move and Merge the cells and Use various Formatting features.	2	10	
14/10/2025	10. Working on MS – EXCEL- Creating a Worksheet in Excel. Copy, Move and Merge the cells and Use various Formatting features.	1	10	
21/10/2025	Revision 10th Practical.	2	11	
21/10/2025	Revision 10th Practical.	1	11	
27/10/2025	11. Using formula and functions prepare worksheet for storing subject marks of ten students and perform the following: <ul style="list-style-type: none"> ➤ Calculate the student wise total and average. ➤ Calculate the subject wise total and average. ➤ Calculate the overall percentage and also individual percentage of the student. 	1	12	

	Create a chart for the above.			
27/10/2025	11. Using formula and functions prepare worksheet for storing subject marks of ten students and perform the following: <ul style="list-style-type: none"> ➤ Calculate the student wise total and average. ➤ Calculate the subject wise total and average. ➤ Calculate the overall percentage and also individual percentage of the student. Create a chart for the above.	2	12	
28/10/2025	Revision 11th Practical.	2	12	
28/10/2025	Revision 11th Practical.	1	12	
03/11/2025	Revision as Per doubts of Students	1	13	
03/11/2025	Revision as Per doubts of Students	2	13	
04/11/2025	Revision as Per doubts of Students	2	13	
04/11/2025	Revision as Per doubts of Students	1	13	
10/11/2025	Revision as Per doubts of Students	1	14	
10/11/2025	Revision as Per doubts of Students	2	14	
11/11/2025	Revision as Per doubts of Students	2	14	
11/11/2025	Revision as Per doubts of Students	1	14	
17/11/2025	Revision as Per doubts of Students	1	15	
17/11/2025	Revision as Per doubts of Students	2	15	
18/11/2025	Revision as Per doubts of Students	2	15	
18/11/2025	Revision as Per doubts of Students	1	15	
24/11/2025	Revision as Per doubts of Students	1	16	
24/11/2025	Revision as Per doubts of Students	2	16	
25/11/2025	Revision as Per doubts of Students	2	16	
25/11/2025	Revision as Per doubts of Students	1	16	


 Sh. Rajat Sharma
 (Computer Assistant)


 Sh. Raman Jamwal
 (H.O.D AS&H.)

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

Lesson Plan : Aug.2025 to Nov.2025

Name of the Teacher : Suniti Rani

Subject : Mathematics -I

Branch : Civil Engineering Semester : First

Govt. Polytechnic Udaipur
Lahaul & Spiti (H.P.)
Campus at Sundernagar Distt. Mandi

Diary No. 2353

Date 02/08/25

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No	Month	Date	Week	Unit	Name of Chapter	Content to be taught	Remarks
1	AUGUST	8,11,12,13,14	1st	Trigonometry	Angles and Its Measurement	Measurement of angles in three system & conversions(Ex-1.1)	
2		18,19,20,21,22	2nd	Do	T-Ratio of Allied Angles, Addition and Subtraction Formule	Exercise 2.1 , Exercise-3.1	
3		25,26,27,28,29	3rd	Do	Transformation of Products into sum or difference and vice versa	Exercise-3.1 & Exercise -4.1	
4	SEPTEMBER	1,2,3,4,5	4th	Do	T-Ratio of multiple & Sub-multiple angles, Graphs of Trigonometrical Functions	Exercise-5.1 & Graphs of $\sin x$ & $\cos x$	
5		8,9,10,11,12	5th	Differential Calculus	Functions and Limits & Revision of some important questions	Exercise-1.1 , Exercise-1.2 CLASS TEST -1	
6		15,16,17,18,19	6th	Differential Calculus	Functions and Limits	Exercise-1.2 & Exercise-1.3	
7		22,23,24,25,26	7th	Do	Differentiation	Diff. of a Function by 1st Principle($\sin x$ & $\cos x$), Imp. Formulae, Exercise-2.2	
8	SEPTEMBER / OCTOBER	29,30,1,3	8th	Do	Diff. of sum, product & quotients of functions and Diff. of fun.of fun.	Exercise-2.2	
9		6,8,9,	9th	Do	Inverse Trig. Function	Exercise 2.3	
10		13,14,15	10th	Do	Logarithmic Differentiation & Revision	Exercise-2.6 , (CLASS TEST -2)	
11		21,24	11th	Algebra	Complex Number	Complex Numbers, Conjugate of Complex No. (Exercise-1.1)	
12		27,28,29,30,31	12th	Do	Do	Modulus of Comp.No. & Amplitude of Comp. No., Polar Form, Exercise-1.2	
13	NOVEMBER	1,3,4,6,7	13th	Do	Discussion on Doubts	HOUSE TEST	
14		10,11,12,13,14,	14th	Do	Partial Fractions , Permutations & Combinations	Exercis-2.1, Exercise-2.2 & Exercise-3.1 , Exercise-3.2	
15		17,18,19,20,21	15th	Do	, Binomial Theorem	Exercise-3.3, Expansion of Binomial Theorem , Gen. Term , Middle Term (Exercise-4.1)	
16		24,25,26	16th	Do	Binomial Theorem	Constant Term & find the Coeffients (Exercise-4.2)	

Teacher's Signature
Suniti Rani (Lect. Mathematics)

Applied Science & Humanity


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


Lesson Plan for Engineering Graphics Semester-1st Session: August to November 2025

S.No.	MONTH	WEEK	DATE	NAME OF CHAPTER	CONTENTS	REMARKS
1	August	2nd	7,8	Basic elements of Drawing	Introduction, Syllabus Overview, Evaluation scheme, Drawing Instruments and accessories materials: method to use them with applications. Convention of lines and their applications. Representative Fractions – reduced, enlarged and full size scales. Engineering drawing Scales such as plain and diagonal scale	100
		3rd	14		Draw horizontal, Vertical, 30 degrees, 45 degrees, 60 and 75 degrees lines, different types of lines, dimensioning styles using Tee and Set squares/drafter Write alphabets and numerical in 7:4 scale (Vertical only) (do this exercise in sketch book).	
		4th	21,22		Dimensioning techniques as per SP-46:2003 – types and applications of chain, parallel and coordinate dimensioning	
		5th	28,29		Write alphabets and numerical in 7:4 scale (Vertical only) (do this exercise in sketch book).	
		1st	4,5		Draw some problems on Engineering Plain and diagonal scale (sheet)	
2	September	2nd	11,12	Orthographic projections	Introduction of projections-orthographic, perspective, isometric and oblique: concept and applications. (No question to be asked in examination). Introduction to orthographic projection, First angle and Third angle method, their symbols. Conversion of pictorial view into Orthographic Views – object containing plain surfaces, slanting surfaces, slots, ribs, cylindrical surfaces. (use First Angle Projection method only)	
		3rd	18,19		Draw some problems on orthographic projections using first angle method of projection having plain and slanting, cylindrical surfaces, ribs and slots.	
		4th	25,26		Draw some problems on orthographic projections using first angle method of projection having plain and slanting, cylindrical surfaces, ribs and slots.	
		1st	3		Introduction to isometric projections. Isometric scale and Natural scale. Isometric view and isometric projection.	
		2nd	9,10		Illustrative problems related to objects containing lines, circles and arcs shape only. Conversion of orthographic views into isometric view/projection. Draw some problems on Isometric view of simple objects having plain and slanting and cylindrical surface (e.g. Cube, Cone and cylinder etc.) by using natural scale	
					Free hand sketches of machine elements: Thread profiles, nuts, bolts, studs, set screws, washer, Locking arrangements. (For branches other than mechanical Engineering, the teacher should select branch specific elements for free hand sketching). Free hand sketches of orthographic view (on squared graph paper) and isometric view (on isometric grid paper).	

P. T. O.

3	October	3rd	16,17	Free Hand Sketches of engineering elements	Draw free hand sketches/ conventional representation of machine elements in sketch book such as thread profiles, nuts, bolts, studs, set screws, washers, locking arrangements	
		4th	23,24			
		5th	30,31			
November		2nd	6,7	Computer aided drafting Interface	Computer Aided Drafting: concept, Hardware and various CAD software available: System requirements and Understanding the interface, Components of AutoCAD software window: Title bar, standard tool bar, menu bar, object properties tool bar, draw tool bar, modify tool bar, cursor cross hair. Command window, status bar, drawing area, UCS icon, File features: New file, Saving the file, opening an existing drawing file, Creating templates, Quit, Setting up new drawing: Units, Limits, Grid, Snap. Undoing and redoing action	
		3rd	13,14			
		4th	20,21			
				Computer aided drafting	Problem based Learning: Given the orthographic views of at least three objects with few missing lines, the student will try to imagine the corresponding objects, complete the views and draw these views in sketch book. Draw basic entities like Line, Circle, Arc, Polygon, Ellipse, Rectangle, Multiline, Polyline. Method of Specifying points: Absolute coordinates, Relative Cartesian and Polar coordinates. Modify and edit commands like trim, extend, delete, copy, offset, array, block, layers. Dimensioning: Linear, Horizontal Vertical, Aligned, Rotated, Baseline, Continuous, Diameter, Radius, Angular Dimensions. Dim scale variable. Editing dimensions. Text: Single line Text, Multiline text.	


 Signature of Teacher
 (Er. Sameer Sharma)


 Signature of H.O.D
 (AS&H)