

Department of Applied Sciences & Humanities
Dr. B. R. Ambedkar Govt. Polytechnic Ambota
Distt. – Una (H.P.)

LESSON PLAN

Program Name	Civil Engineering
Subject Name	Applied Mathematics-I
Subject Code	BS101
Semester	I st
Subject Teacher Name	Sandeep Kumar

Evaluation Scheme

Evaluation Scheme									
Sr. No.	Subject Name	Study scheme (Hrs/Week)		Marks in Evaluation Scheme					
				Internal Assessment			External Assessment		
		Th	T	Th	Pr	Total	Th	Pr	Total
1.	Applied Mathematics-I	3	1	50	-	50	100	-	100
Reference Books		(i) B.S. Grewal, Higher Engineering Mathematics. Khanna Publishers, New Delhi. 40th Edition.2007							
		(ii) S.S. Sabharwal, Sunita Jain, Eagle Parkashan. Applied Mathematics, Vol. I & II, Jalandhar.							

Course Outcomes (COs)

CO - 1	Apply the fundamental concepts of trigonometry to solve mathematical problems.
CO - 2	Analyze mathematical functions and evaluate limits using standard limits and methods such as factorization, substitution, and rationalization.
CO - 3	Apply differentiation techniques, including first principles and rules of differentiation, to solve problems involving algebraic, trigonometric, and inverse trigonometric functions.
CO - 4	Solve algebraic operations on complex numbers; represent them geometrically using the Argand diagram, and use partial fraction decomposition to simplify rational expressions.
CO - 5	Apply the concepts of permutations, combinations, and the binomial theorem to solve counting problems.

Teaching Plan

	Name of Topic	Proposed Date	Actual Date	Remarks
UNIT-I Basic Trigonometry	Concept of angles.	10/08/2026		
	Measurement of angles in degrees, grades and radians and their conversions	12/08/2026 14/08/2026/		
	radian measure formula (Arc Length Formula in radians) and simple related	17/08/2026		

	problems,	19/08/2026		
	T-Ratios of Allied angles (without proof),	21/08/2026 22/08/2026		
	Sum, difference formulae and their applications (without proof).	24/08/2026 26/08/2026		
	Product formulae (Transformation of product to sum, difference and vice versa).	28/08/2026 29/08/2026		
	Graphs of $\sin x$, $\cos x$.	02/09/2026		
UNIT-II	Definition of function, Value of a function, Even and Odd Function,	05/09/2026		
Functions and Limits	Function of a function. Limit of a function, Standard limits (with proof) $\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a} = na^{n-1}$ & $\lim_{x \rightarrow 0} \frac{a^x - 1}{x} = \log_e a$ and related questions.	07/09/2026		
	Class Test-1 (As per HPTSB schedule)	09/09/2026		
	Problems related to find the limit of an algebraic function by using factorization method,	11/09/2026 14/09/2026		
	substitution method and rationalization method.	16/09/2026		
	Differentiation by first principle ($\sin x$ & $\cos x$).	18/09/2026 19/09/2026		
UNIT-III	Rules of differentiation (sum, product, quotient, chain rule (Differentiation of function of a function).	21/09/2026 23/09/2026		
	Differentiation of trigonometric and inverse trigonometric functions,	25/09/2026 26/09/2026 28/09/2026		
	Logarithmic differentiation.	30/09/2026 03/10/2026 05/10/2026		
	Class Test-2 (As per HPTSB schedule)	07/10/2026		
	Differentiation			
UNIT-IV	Complex Numbers: Definition, real and imaginary parts	09/10/2026		
	conjugate of a complex	12/10/2026		

	with applications to engineering problems.			
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Assignments

Assignment No	Contents of Syllabus Covered	Proposed Date	Actual Date	Remarks
A-1	Unit-1& Unit-2	11/09/2026		
A-2	Unit-3& Unit-4	12/10/2026		
A-3	Unit-5	06/11/2026		

House Test/Class Test

Name of test	Syllabus for Tests	Proposed Date	Actual Date	Remarks
Class Test -1	Unit-1&Unit-2	As per HPTSB Academic Schedule		
Class Test -2	Unit-3			
House Test - 1	Unit-1, Unit-2,Unit-3and,Unit-4			


(Signature of Teacher)


(Signature of HOD)

Department of Applied Sciences & Humanities
Dr. B. R. Ambedkar Govt. Polytechnic Ambota
Distt. – Una (H.P.)

LESSON PLAN

Program Name	Civil Engineering
Subject Name	Applied Physics-I
Subject Code	BS103
Semester	1 st
Subject Teacher Name	Pritam Singh Dogra

Study and Evaluation Scheme:

Sr. No.	Name of Subject	Th.		Pr.	Credits	Internal Assessment			External Assessment					Total Marks
		L	T			Th.	Pr.	Total	Th.	Hrs.	Pr.	Hrs.	Total	
2	Applied Physics-I	03	-	02	03	50	50	100	100	3	100	3	200	300

Course Objectives:

Applied Physics covers a wide range of topics that are closely connected to the phenomena occurring in our surroundings. The subject seeks to develop an understanding of the physical world through observation as well as by predicting the behaviour of objects under different conditions. Emphasis is placed on the practical application of physical laws and analytical methods in various technical and engineering fields, highlighting their relevance in real-world situations.

	Name of Topic	Proposed Date	Actual Date
Unit-1	Physical world, Units and Measurements		
	Physical Quantities (Physical Quantities: Fundamental & Derived Quantities)	10-08-26	
	Systems of Units (CGS, FPS, MKS, SI)	11-08-26	
	Units (SI Units)	17-08-26	
	Dimensions and Dimensional Formulae (Definition) and Dimensional Formulae of Physical Quantities)	18-08-26	
	Dimensions and Dimensional Formulae	22-08-26	
	Principle of Homogeneity	24-08-26	
	Dimensional analysis	25-08-26	
Unit-2	Errors (Instrumental, Systematic, Random & Gross Errors)	29-08-26	
	Force and Motion	31-08-26	
	Scalar and Vector Quantities (Definition and Examples)	01-09-26	
	CLASS TEST -1		
	Vectors (Representation of Vectors and Types of Vectors)	05-09-26	
	Linear Momentum (Linear Momentum and its SI Unit)	07-09-26	
	Linear Momentum (Linear Momentum and its SI Unit)	08-09-26	
	Angular Displacement, Angular Velocity and Angular Acceleration	15-09-26	

	Circular Motion	19-09-26	
	Relation between Linear and Angular Velocity	21-09-26	
	Angular Momentum (Law of Conservation of Angular Momentum and Applications)	22-09-26	
	Moment of Inertia (Physical Significance + Numerical Problems/ Revision)	26-09-26	
Unit-3	Work, Power and Energy		
	Work (Work and Types of Work)	28-09-26	
	Energy (Energy and Its Forms)	03-10-26	
	Transformation of Energy	05-10-26	
	Kinetic Energy: Definition and Formula	06-10-26	
	CLASS TEST-II		
	Derivation of Kinetic Energy	12-10-26	
	Potential Energy: Definition and Formula	13-10-26	
	Conservation of Mechanical Energy,	17-10-26	
	Power (Power and Numerical Problems)	24-10-26	
Unit-4	Properties of matter		
	Elasticity and Plasticity (Elasticity and Plasticity, Stress and Strain)	26-10-26	
	Types of Stress, Types of Strain	27-10-26	
	Hooke's Law and Modulus of Elasticity	31-10-26	
	Types of Modulus of Elasticity (Youngs Modulus, Bulk Modulus and Modulus of Rigidity)	02-11-26	
	Pressure (Pressure, Atmospheric Pressure , Gauge Pressure and Absolute Pressure)	03-11-26	
Unit-5	House Test		
	Heat & Temperature	07-11-26	
	Heat & Temperature (Definition of heat and temperature (on the basis of kinetic theory)	10-11-26	
	Difference between heat and temperature	16-11-26	
	Modes of transfer of heat- conduction, convection and radiation with examples	17-11-26	
	Different scales of temperature and their relationship	21-11-26	
	Revision	28-11-26	

Prescribed Books	Name of Book	Author Name	Publication
	Concepts of Physics	H. C. Verma	Bharati Bhawan
	Principles of Physics	Jearl Walker, David Halliday and Robert Resnick	Wiley
	Text book of Physics for Class XII	A.W. Joshi	NCERT

Assignment No	Contents of Syllabus Covered	Proposed Date	Actual Date	Remarks
A-1	Unit-1 & 2	09/09/2026		
A-2	Unit-3 & 4	07/10/2026		

House Test/Class Test

Name of test	Syllabus for Tests	Proposed Date	Actual Date	Remarks
Class Test -1	Unit-1 & 2	As per HPTSB Academic Schedule		
Class Test -2	Unit-3 & 4			
House Test - 1	Unit-1, 2, 3, 4 & 5			

(Signature of Teacher)

(Pritham Singh Dogra)

(Signature of HOD)

LESSON PLAN

Program Name	Diploma (Civil Engg..)
Course/Subject Name	Applied Chemistry
Course/Subject Code	Applied Chemistry: BS106 (Th) & BS110 (Pr)
Course/Subject Coordinator Name	Swati Bhardwaj

SN	Subject Name	Study Scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1	Applied Chemistry Theory + Applied Chemistry Practical	3Th + 4 Pr (G1: 2 G2: 2 hrs)	50	50	100	100

REFERENCE BOOKS

1. Engineering chemistry, Agarwal Shikha - Cambridge Press New Delhi.
2. Text Books Of Chemistry for Class XI & XII (Part-I,Part-II) - NCERT Delhi.
3. Jain & Jain Engineering Chemistry - Dhanpat Rai and Sons, New Delhi
4. Applied Chemistry Laboratory Practices Vol. 1 & Vol.II, Dr. G.H. Hugar & Prof. A.N. Pathak - NITTTR, Chandigarh.
5. Eagle's Applied Chemistry By S C Ahuja Edited by Dr Vibha Sharma and Aman Saini

ONLINE RESOURCES

1. www.chemguide.co.uk/atommenu.html (Atomic Structure and Chemical bonding)
2. <https://www.iqsdirectory.com/articles/metal-alloy.html> (Metal, Non-metal, alloy)

Course Outcomes: After the completion of the course the student will be able to:

C01	Explain the concepts of atomic structure, electronic configuration, chemical bonding and the properties of engineering materials based on chemical principals.
C02	Interpret the characteristics of solutions, water quality, hardness and buffer solution for domestic and industrial applications.
C03	Apply the principles of electrochemistry and electrolysis to industrial processes, corrosion and metallic prevention methods used in engineering.
C04	Analyze metallurgical processes, engineering materials, alloys and polymers to relate their properties with engineering applications.
C05	Evaluate the suitability of fuels and lubricants based on their properties and performance for economical and eco - friendly industrial applications.



Teaching Plan:

Lect. No.	Name of topic	Proposed Date	Actual Date	Remarks
1	Unit-1. Atomic Structure and Chemical Bonding : Fundamental particles (electron, proton, neutron), Bohr's model of atom (Postulates).	11.08.2026		
2	Bohr's theory (successes & limitations).	12.08.2026		
3	Atomic number, mass number, isotopes, isobars, isotones.	14.08.2026		
4	Concept of orbitals, difference between orbit and orbital.	18.08.2026		
5	Shapes of s and p orbitals.	19.08.2026		
6	Quantum numbers.	21.08.2026		
7	Aufbau's principle, Pauli's exclusion principle, Hund's rule of maximum multiplicity.	25.08.2026		
8	Electronic configuration (Z=1 to 30)	26.08.2026		
9	Chemical bonding – cause of chemical bonding, types of bonds: ionic bond (NaCl example), covalent bond (O_2 , N_2 , H_2), Difference between sigma and pie bond.	01.09.2026		
10	Unit-2. Solutions and Water : Definition of Solution, Solute and Solvent with examples, Methods to express the concentration of solutions - Molarity, Molality and Normality.	02.09.2026		
11	pH of solution, industrial applications of pH solution, Definition of buffer solution and industrial applications of buffer solution.,	08.09.2026		
12	Class test I	09.09.2026		
13	Definition of Hard and soft water, Types of hardness, Units of hardness (mg/ltr and ppm), and simple numerical based on hardness.	11.09.2026		
14	Disadvantages caused by use of hard water in domestic and industrial use.	15.09.2026		
15	removal of hardness - permutit process, Characteristics of drinking water.	16.09.2026		

(Signature)

38	Physical properties (viscosity and viscosity index, flash and fire point).	25.11.2026		
39	Chemical properties (total acid number, saponification value) of lubricants.	27.11.2026		

Assignments:

Assignments	Contents of syllabus covered	Proposed Date slot	Actual Date	Remarks
A-1	Atomic Structure&Chemical Bonding, Solutions&water, Electrochemistry and Corrosion.	11.09.2026 / 26.10.2026		
A-2	Engineering Materials& polymers, chemistry of fuels and lubricants	30.10.2026 /25.11.2026		

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed Date	Actual Date	Remarks
CT-I	30% of the syllabus	09.09.2026		
CT-II	Next 30% of the syllabus	16.10.2026		
House Test	80% of the syllabus	1 ST week of November 2026		

Signature of Teacher

(Swati Bhardwaj)

HOD, AS&H

Department of Applied Sciences & Humanities

Practical Coverage Plan (Lab: Applied Chemistry lab)

Branch & Semester: Civil Engg, 1st Sem

Exp. No.	Name of experiment	Proposed Date	Proposed Date	Actual Date	Actual Date	Remarks
		G1	G2	G1	G2	
1	Preparation of standard solution of oxalic acid.	13.08.2026 20.08.2026	10.08.2026 17.08.2026			
2	To determine the strength of given sodium hydroxide solution by titrating against standard oxalic acid solution by using phenolphthalein as indicator.	27.08.2026 03.09.2026	24.08.2026 07.09.2026			
3	Experimental verification of Faraday's first law of Electrolysis by using copper sulphate solution and copper electrodes.	10.09.2026 17.09.2026	14.09.2026 21.09.2026			
4	Determination of pH of given solution by using pH meter.	24.09.2026 01.10.2026	28.09.2026 05.10.2026			
5	To estimate the amount of moisture in the given coal sample gravimetrically.	15.10.2026 22.10.2026	12.10.2026 19.10.2026			
6	To estimate the amount of ash in the given coal sample gravimetrically.	29.10.2026 05.11.2026	02.11.2026 09.11.2026			
7	To compare the viscosity of given lubricating oils by Redwood viscometer.	12.11.2026 03.09.2026	16.11.2026 07.09.2026			
8	To estimate the total alkalinity of a given water sample by titrating it against standard Sulphuric acid solution.	19.11.2026 26.11.2026	23.11.2026 30.11.2026			
Signature of Teacher						HOD, AS&H

LESSON PLAN

Name of Branch	Civil Engg.
Course/Subject Name	Applied Mechanics
Course/Subject Code	ES106 & ES 112
Course/Subject Coordinator Name	Er. Amit Sharma

Evaluation scheme

S.No.	Subject Name	Study scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Engineering Mechanics Theory & Engineering Mechanics lab	TH 2 ⁺ (DCS) + 2 (Lab)				
Reference books			(i) D.S. Bedi, Engineering Mechanics, Khanna Publications, New Delhi (2008)			
			(ii) Khurmi, R.S., Applied Mechanics, S. Chand & Co. New Delhi.			
			(iii) Bansal R K, A text book of Engineering Mechanics, Laxmi Publications.			
			(iv) Ramamrutham, Engineering Mechanics, S. Chand & Co. New Delhi.			
			(v) Ram, H. D.; Chauhan, A. K., Foundations and Applications of Applied Mechanics, Cam-bridge University Press.			

Course Outcomes: After the completion of the course the student will be able to

CO1	Identify the force systems for given conditions by applying the basics of mechanics.
CO2	Determine unknown force(s) of different engineering systems.
CO3	Apply the principles of friction in various conditions for useful purposes.
CO4	Find the centroid and centre of gravity of various components in engineering systems.



Teaching Plan:

L. No.	Topic Covered	Proposed Date	Actual Date	Remarks
1	Unit – I Basics of mechanics and force system Significance and relevance of Mechanics, Applied mechanics, Statics, Dynamics.	04/08/26		
2	Space, time, mass, particle, flexible body and rigid body. Scalar and vector quantity, Units of measurement (SI units)	04/8/26		
3	Force – unit, representation as a vector and by Bow's notation, characteristics and effects of a force, Principle of transmissibility of force.	04/8/26		
4	Force system and its classification	04/8/26		
5	Resolution of a force - Orthogonal components of a force, moment of a force, Varignon's Theorem.	05/8/26		
6	Composition of forces – Resultant, analytical method for determination of resultant for concurrent, non-concurrent and parallel co-planar force systems	05/8/26		
7	Law of triangle, parallelogram and polygon of forces.	05/8/26		
8	Unit– II Equilibrium: Equilibrium and Equilibrant, Free body and Free body diagram, Analytical and graphical meth	11/8/26		
9	Lami's Theorem – statement and explanation, Application for various engineering	11/8/26		
10	Types of beam, supports (simple, hinged, roller and fixed) and loads acting on beam (vertical point load, uniformly distributed load),	12/8/26		
11	Beam reaction for cantilever, simply supported beam with or without overhang – subjected to combination of Point load and uniformly distributed load	12/8/26		
12	Beam reaction graphically for simply supported beam subjected to vertical point loads	12/8/26		
13	Beam reaction for cantilever, simply supported beam with or without overhang – subjected to combination of Point load and uniformly distributed load	18/8/26		
14	Unit– III Friction: Friction and its relevance in engineering.	16/8/26		
15	Typical problems on friction			

15	Types and laws of friction, limiting equilibrium, limiting friction, co-efficient of friction,	19/8/26		
16	Angle of friction, angle of repose, relation between co-efficient of friction and angle of friction	19/8/26		
17	Equilibrium of bodies on level surface subjected to force parallel and inclined to plane.	25/8/26		
18	Equilibrium of bodies on inclined plane subjected to force parallel to the plane only.	25/8/26		
19	Equilibrium of bodies on level surface subjected to force parallel and inclined to plane. Equilibrium of bodies on inclined plane subjected to force parallel to the plane only.	25/8/26		
20	Equilibrium of bodies on level surface subjected to force parallel and inclined to plane. Equilibrium of bodies on inclined plane subjected to force parallel to the plane only.	11/9/26		
21	NUMERICAL PROBLEMS ON CHAPTER 1(REVISION)	11/9/26		
22	NUMERICAL PROBLEMS ON CHAPTER 2(REVISION)	01/9/26		
23	NUMERICAL PROBLEMS ON CHAPTER 3(REVISION)	01/9/26		
24	Unit- IV Centroid and centre of gravity	8/9/26		
25	Centroid of geometrical plane figures (square, rectangle, triangle)	8/9/26		
26	Centroid of geometrical plane figures (square, rectangle, triangle, circle, semiCIRCLE)	8/9/26		
27	Centroid of composite figures composed of not more than two geometrical figures.	09/09/26		
28	Centroid of composite figures composed of not more than two geometrical figures.	09/09/26		
29	Centroid of composite figures composed of not more than two geometrical figures. Centre of Gravity of simple solids (Cube cuboid, cone, cylinder, sphere, hemisphere)	09/09/26		
30	Centroid of composite figures composed of not more than two geometrical figures. Centre of Gravity of simple solids (Cube cuboid, cone, cylinder, sphere, hemisphere)	15/09/26		

Lesson Plan/Lab Plan (Sports and Yoga)

Trade : Civil Engineering

Session: Aug-Dec. 2026

Sem: 1st

Sr. No	Name of Practical	Proposed Date	Actual Date	Remarks
1. Physical fitness	Introduction :- This module emphasizes the development of physical fitness through activities such as warm-up.	22-Aug-26		
	Stretching, Flexibility, Endurance, strength exercises and cool-down.	29-Aug-26		
2. Yoga	Introduction:- The module on yoga may include loosening exercises	5-Sep-26		
	Surya Namaskar, Asanas (Standing, sitting, prone and supine)	12-Sep-26		
	Pranayama	19-Sep-26		
	Meditation	26-Sep-26		
3. Sports activities	Introduction:- This module emphasizes the development of physical fitness through activities such as warm up.	3-Oct-26		
	Introduction:- Students may participate in games such as Volleyball	10-Oct-26		
	Basketball	17-Oct-26		
	Badminton	24-Oct-26		
	Table Tennis	31-Oct-26		
	Athletics	7-11-2026, 14-11-2026		
	Kabaddi	21-Nov-26		
	Kho-Kho	28-Nov-26		
Sign. Of Teacher	Surya Namaskar, Asanas (standing, sitting, prone and supine)	12-Sep-26		
	Pranayama	19-Sep-26		
	Meditation	26-Sep-26		
	Relaxation techniques	3-Oct-26		
	Introduction:- Students may participate in games such as Volleyball	10-Oct-26		
	Basketball	17-Oct-26		
	Badminton	24-Oct-26		
	Table Tennis	31-Oct-26		
3. Sports activities	Athletics	7-11-2026, 14-11-2026		
	Kabaddi	21-Nov-26		
	Kho-Kho	28-Nov-26		

HOD

App. Sci. & Hum.

Lesson Plan/Lab Plan (Welding Workshop)

Trade : Civil

Sem: 1st

Session: Aug-Dec. 2026

Sr. No	Name of Practical	Proposed Date	Actual Date	Rem
1	Safety Precautions of concerned shop and use of personal protective equipment (PPE) demonstration of tools, equipment, sample jobs, Best practices in the concerned shop.	G-3 12/8/26 G-1 19/8/26 G-2 26/8/26		
2	Introduction and importance of welding process as compared to other material joining processes. Specifications and type of Arc welding machines, parts identification, classification, selection and coding of electrodes, welding parameters, welding joints and welding positions. Common weldable materials, safety precautions in welding shop, use of Personal Protective Equipment, Use of welding screens, Hazards and remedies during welding, Elementary symbolic representations, demo of tools, equipment, sample jobs prepared, set up of Gas welding apparatus, and welding defects.	G-3 11/8, 14/8 G-1 21/8, 21/8 G-2 28/8, 28/8		
3	Practice of striking arc and depositing uniform and straight beads on flat at different current levels. (Minimum 4 beads on M.S. flat at four setting of current level using shielded metal arc welding and differentiating their characteristics).	G-3 24/9, 23/9 G-2 9/9, 11/9 G-1 16/9, 18/9		
4	Cut a job with abrasive cut off / chop saw machine and make a lap joint using shielded metal arc welding (SMAW) process.	G-3 25/9, 25/9 G-2 11/9, 21/10 G-1 18/9, 30/9		
5	Edge Preparation and welding butt joint using shielded metal arc / gas welding process	G-3 14/10, 16/10 G-1 23/10, 23/10 G-2 7/11, 6/11		
6	Edge Preparation and welding T Joint using shielded metal arc welding (50mm x 50mm x 6 mm x 100 mm M.S. Flat).	G-3 16/10, 14/11 G-1 28/10, 11/11 G-2 9/10, 9/10		
7	Cut a round pipe with abrasive cut off / chop saw machine & prepare T-pipe joint using gas/arc welding.	G-3 6/11, 25/11 G-1 13/11 G-2 30/11, 30/11, 18/11		
8	Prepare a job on Spot Welding.	G-3 27/11, 27/11 G-1 13/11 G-2 20/11, 20/11		

Workshop Instr.

Vishal Verma

Foreman Instr.

Workshop Supdt

HOD
App. Sci. & Hum.

Trade : Civil Engg.

Sem: 1st

Sr. No	Name of Practical	Proposed Date	Actual Date	Remarks
1	Safety Precautions of concerned shop and use of personal protective equipment (PPE), demonstration of tools, equipment, sample jobs, best practices in the concerned shop.	G-II 12/8/2026		
		G-III 19/8/2026		
		G-I 26/8/2026		
2	Demonstration of various power tools, apparatus, equipment, hand tools used in sheet metal shop.	G-II 14/8/2026		
		G-III 21/8/2026		
		G-I 28/8/2026		
3	Prepare a rectangular job 100*70mm involving different sheet metal operations like measuring, marking, snipping practice and filing etc. (at least 6 cuts of 70 mm).	G-II 14/8/2026		
		G-III 21/8/2026		
		G-I 28/8/2026		
4	Prepare a seam joint by using hand tools on GI sheet.	G-II 02/9, 9/9		
		G-III 16/9, 18/9		
		G-I 23/9, 25/9		
5	Prepare double riveted lap joint (zig-zag type) on GI sheet.	G-II 11/9, 11/9		
		G-III 18/9, 14/10		
		G-I 25/9, 21/10		
6	Prepare a single cover single riveted butt joint (chain type) on GI sheet.	G-II 30/9, 07/10		
		G-III 16/10, 16/10		
		G-I 23/10, 23/10		
7	Fabricate a funnel of GI sheet using operations of shearing, flattening, and bending.	G-II 09/10, 09/10		
		G-III 28/10, 30/10		
		G-I 11/11, 13/11		
8	Perform any one of sheet metal operation on swaging machine on Job-V like beading/swaging/crimping etc.	G-II 30/10, 18/11, 20/11		
		G-III 20/11, 25/11		
		G-I 13/11, 27/11, 27/11		

Workshop Instr.

Davinder Sharma

Foreman Instr.

Workshop Supdt

HOD
App. Sci & Hum.

Government Polytechnic Ambota
LESSON PLAN

Name of Faculty	Amit Sharma	Academic Session	August – November 2026
Course Name	Engineering Graphics	Scheme	N-2026
Course Code	ES103	Semester	1st (Civil Engg.)
Course Type	Engineering Science (ES)	Semester Start Date	01-08-2026
L-T-P	0-0-6 (L:0, T:0, P:6)	Semester End Date	28-11-2026

STUDY AND EVALUATION SCHEME

Teaching Hours/Week		Internal Assessment		External Assessment				Total		Credit
Theory	Practical	Theory	Practical	Theory	Hrs.	Practical	Hrs.	Theory	Practical	
NA	06 Hrs.	NA	50	NA	NA	100	03 Hrs.	NA	150	03

COURSE OUTCOMES (COs)

On successful completion of this course, students will be able to:

CO1	Identify and use standard drawing instruments accurately.
CO2	Draw geometrical figures and apply different types of lines.
CO3	Apply standard dimensioning techniques, drawing codes, conventions, and symbols as per IS SP-46 (2003) in engineering drawings.
CO4	Draw orthographic projections, sectional and isometric views of simple objects.
CO5	Interpret and draw the free hand sketches of Civil, Electrical and Mechanical engineering symbols and conventions.

Recommended Books

1	Engineering Drawing – P. S. Gill, S. K. Kataria & Sons, New Delhi
2	Elementary Engineering Drawing in First Angle Projection – N. D. Bhatt, Charotar Publishing House Pvt. Ltd., Anand
3	A Text Book of Engineering Drawing – Surjit Singh, Dhanpat Rai & Co., Delhi
4	Engineering Drawing – R. B. Gupta, Satya Prakashan, New Delhi
5	Engineering Graphics – Sharad K. Pradhan and K.K. Jain, Khanna Book Publishing Co., New Delhi
6	Engineering Drawing Practice for Schools and Colleges (SP 46:2003) – Bureau of Indian Standards, Government of India, New Delhi

Teaching Plan

Unit No.	No. of Sessions Planned	Topic / Sheet to be covered	Proposed date (as per timetable)	Actual Date	Remarks
1. Introduction to Engineering Drawing (2 Sheets)	1	Introduction to engineering drawing instruments and materials; standard drawing sheet layouts and sizes (ISO A-series); standard sizes of drawing boards	13/8/26		
	2	Convention of lines and their applications in Engineering Drawing as per BIS specifications	13/8/26		
	3	Practice of vertical, horizontal and inclined lines	13/8/26		
	4	Geometrical figures: triangles, rectangles, circles, ellipses and curves	13/8/26		
	5	Hexagon and pentagon construction with the help of drawing instruments (Sheet-1 completion)	20/8/26		
	6	Freehand lettering (5, 8 & 12 mm) and instrumental lettering of upper-case Gothic, single stroke, vertical (height 25-35 mm, ratio 7:4) (Sheet-2 completion)	20/8/26		
2. Dimensioning Techniques (1 Sheet)	7	Necessity and principles of dimensioning; elements of dimensioning; dimensioning methods and arrangement of dimensions as per BIS standards	27/8/26		
	8	Dimensioning of overall sizes, circles, chamfered surfaces, angles	27/8/26		

Unit No.	No. of Sessions Planned	Topic / Sheet to be covered	Proposed date (as per timetable)	Actual Date	Remarks
	38	Freehand sketching of standard Mechanical engineering symbols and conventions (Sheet-12 completion)	26/11/26		

Class Test

Name of Test	Syllabus Covered in Test (Unit-wise)	Proposed date	Actual Date	Remarks
Class Test-I	Unit-1, 2 & most of Unit-3	16/9/26 (2nd week of September)		
Class Test-II	Unit-3 to Unit-4	8/10/26 (2nd week of October)		

Signature of Course Teacher with Name

Amir Shams

Approved by

[Signature]
OIC/HoD/Principal