



GOVERNMENT POLYTECHNIC PAONTA SAHIB
AULA KUAN, DISTT. SIRMOUR (HP) - 173031
APPLIED SCIENCES AND HUMANITIES
LESSON PLAN

Academic Year	2026
Semester	Mechanical Engineering, Computer Engineering, Automobile Engg
Course Code	HS101
Course Name	Communication Skills in English
Course Type	Diploma in Engineering
L-T-P	3 hrs
Name of Faculty	Dr. Shelly Bhardwaj
Semester Start & End Dates	1 st August to 28 th November

STUDY AND EVALUATION SCHEME

Sr. No.	Name of the Subject	Th	Pr	Internal Assessment			External Assessment					Total Marks
				Th	Pr	Total	Th	Hrs	Pr	Hrs	Total	
1	Communication Skills in English	03	-	50	-	50	100	3	-	3	100	150

Lecture No.	Unit & Topic of Discussion	Topic Details	Delievery Method	Remarks
Unit- 1 Communication: Theory and Practice				
Lecture 1,2	Basics of communication	Concept, Significance and Process of Communication, Levels	Chalk & Talk	
Lecture 3,4	Types of communication	Formal and informal, verbal, non-verbal and written.	Chalk & Talk	
Lecture 5,6	Effective communication	Barriers to effective communication and how to Overcome these	Chalk & Talk	
Lecture 7	Effective communication	7Cs for effective communication	Chalk & Talk	
Lecture 8,9	Listening Skills	Significance and Essentials of Active Listening Skills	Chalk & Talk	
Lecture 10,11	Speaking Skills	Significance and Essentials of Effective Spoken Communication	Chalk & Talk	
Lecture 12,13	Concept and Significance of Soft and Life Skills	Role of Communication Skills in Developing Soft and Life Skills.	Chalk & Talk	
Unit – 2 Reading Skills				
Lecture 14	Reading Skills	Definition, Meaning and Significance of Reading Skills	Chalk & Talk	
Lecture	Techniques of Reading	SQ3R method of Reading – Survey,	Chalk & Talk	

15				
Lecture 16	Techniques of Reading	Question, Read, Recite, Review		
Lecture 17	Literature and Textual Study for honing Reading Skills	Skimming and Scanning, Extensive and Intensive Reading	Chalk & Talk	
Lecture 18,19	Literature and Textual Study for honing Reading Skills	Poetry: Daffodils by William Wordsworth	Chalk & Talk	
Lecture 20,21	Literature and Textual Study for honing Reading Skills	Prose: Life Sketch of Dr. A.P.J. Abdul Kalam	Chalk & Talk	
		Short Story: With the Photographer by Stephen Leacock	Chalk & Talk	
Unit 3: Functional Grammar and Vocabulary				
Lecture 22,23,24	Grammar	Tenses	Chalk & Talk	
Lecture 25,26	Grammar	Change of Voice	Chalk & Talk	
Lecture 27,28	Grammar	Change of Narration	Chalk & Talk	
Lecture 29	Grammar	Article	Chalk & Talk	
Lecture 30,31	Grammar	Parts of Speech: Noun, Pronoun, Adjective, Verb, Adverb, Conjunction, Preposition,	Chalk & Talk	
Lecture 32,33	Vocabulary	Glossary of Administration terms, Pair of Words	Chalk & Talk	
Lecture 34	Vocabulary	Synonyms, Antonyms.	Chalk & Talk	
Unit 4: Writing Skills				
Lecture 35,36	Writing Skills	Significance and Essential Components of Writing Skills	Chalk & Talk	
Lecture 37	Drafting Skills	Significance of Notice,	Chalk & Talk	
Lecture 38,39,40	Drafting Skills	Circular, Official letters and Email etiquette,	Chalk & Talk	
Lecture 41,42	Drafting Skills	Writing Paragraphs through Outlines,	Chalk & Talk	
Lecture 43,44,45	Drafting Skills	Resume Writing and Forwarding Letter.	Chalk & Talk	

	Name of Book	Author Name	Publication
Prescribed Books	Communication Techniques and Skills	R. K. Chadha	Dhanpat Rai Publications
	Practical English Usage	Michael Swan	Oxford University Press
	High School English Grammar and Composition	Wren and Martin	S. Chand Publications

Thapar
Faculty

L
HOD



GOVERNMENT POLYTECHNIC PAONTA SAHIB
 AT DHAULA KUAN, DISTT. SIRMOUR (HP) - 173031
APPLIED SCIENCES AND HUMANITIES
LESSON PLAN

Academic Year	2026
Branch & Semester	First Semester Common to All
Course Code	BS101
Course Name	Mathematics-I
Course Type	Diploma
L-DCS	3-1
Name of Faculty	Sukanya kumari
Semester Start & End Dates	1 st Aug to 28 th November

STUDY AND EVALUATION SCHEME

Sr. No.	Name of the Subject	Th	Pr	Internal Assessment			External Assessment					Total Marks
				Th	Pr	Total	Th	Hrs	Pr	Hrs	Total	
2	Mathematics -I	4	0	50	-	50	100	3	-		100	150

Lecture No.	Unit & Topic of Discussion	Topic Details	Delievery Method	Remarks
	Unit-1 Basic Trigonometry		Chalk & talk	
Lecture 1	Trigonometry	measurement of angles in degrees and grade	Chalk & talk	
Lecture 2,3		measurement of angles in radians and their conversions	Chalk & talk	
Lecture 4,5		measurement of angles in degrees, grades and radians and their conversions	Chalk & talk	
Lecture 6,7		Sum, formulae and their applications (without proof).	Chalk & talk	
Lecture 8,9		difference formulae and their applications	Chalk & talk	
Lecture 10,11		Sum, difference formulae and their applications	Chalk & talk	
Lecture 12		Product formulae and their applications	Chalk & talk	
Lecture 13		Transformation of product to sum and their applications	Chalk & talk	
Lecture 14,15		Mixed problems of product formulae, sub-multiple angles (2A), (3A), (A/2).	Chalk & talk	
Lecture 16		Mixed problems of sub-multiple angles	Chalk & talk	

Lecture 17		Mixed problems of sub-multiple angles	Chalk & talk	
Lecture 18		Graphs of $\sin x$ and $\cos x$	Chalk & talk	
Unit-2 Function and Limits				
Lecture 19,20,21	Differential Calculus	Definition of function, Value of a function, Even and Odd Function	Chalk & talk	
Lecture 22		Function of a function.	Chalk & talk	
Lecture 23		Limit of a function		
Lecture 24,25		Standard limits (with proof) and related questions	Chalk & talk	
Lecture 26-29		Problem based on standard limits	Chalk & talk	
Unit-3 Differentiation				
Lecture 30		Differentiation by definition of $\sin x, \cos x$.	Chalk & talk	
Lecture 31		Rules of differentiation (sum, product, quotient, chain rule)	Chalk & talk	
Lecture 32		problems of Differentiation by definition	Chalk & talk	
Lecture 33		Differentiation of sum and differences of two or more functions	Chalk & talk	
Lecture 34		Differentiation of product & quotient of functions	Chalk & talk	
Lecture 35		Differentiation of function of a function & trigonometric functions	Chalk & talk	
Lecture 36		Differentiation of inverse trigonometric functions,	Chalk & talk	
Lecture 37		Differentiation Logarithmic differentiation	Chalk & talk	
Lecture 38		problems based on differentiation	Chalk & talk	
Unit 4:Complex Numbers and Partial Fractions				
Lecture 39	Complex Number	Definition, real and imaginary parts of a Complex number	Chalk & talk	
Lecture 40		Addition, Subtraction and Multiplication of complex number	Chalk & talk	
Lecture 41,42		conjugate of a complex number, Divisions of complex numbers	Chalk & talk	
Lecture 43		modulus and amplitude of a complex number	Chalk & talk	
Lecture 44		polar and Cartesian representation of a complex number and its conversion from one form to other	Chalk & talk	
Lecture 45		polar and Cartesian representation of a complex number and its conversion from one form to other	Chalk & talk	
Lecture 46	Partial Fraction	Definition of polynomial fraction proper & improper fractions and definition of partial fraction	Chalk & talk	

Lecture 47		To resolve proper fraction into Partial fractions with denominator containing non-repeated linear factors	Chalk & talk	
Lecture 48,49		To resolve proper fraction into Partial fractions with denominator containing repeated linear factors	Chalk & talk	
Unit 4: Permutation , Combination and Binomial Theorem				
Lecture 50	Permutation	Value of nPr	Chalk & talk	
Lecture 51		Problems of permutations	Chalk & talk	
Lecture 52	Combination	Value of nCr	Chalk & talk	
Lecture 53		Problems of Combinations	Chalk & talk	
Lecture 54		Mixed problems of Permutation and Combinations	Chalk & talk	
Lecture 55,56	Binomial theorem	Binomial theorem (without proof) for positive integral index (expansion and general form);	Chalk & talk	
Lecture 57,58		binomial theorem for any index (expansion without proof).	Chalk & talk	
Lecture 59,60		first and second binomial approximation with applications to engineering problems	Chalk & talk	

	Name of Book	Author Name	Publication
Prescribed Books	Higher Engineering Mathematics	B.S.Grewal	Khanna publications
	Engineering Mathematics	Reena Garg	Khanna publications


Faculty

HOD



GOVERNMENT POLYTECHNIC PAONTA SAHIB
AT DHAULA KUAN, DISTT. SIRMOUR (HP) - 173031
DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN

Academic Year	AUG - DEC 2026
Semester	First
Course Code	BS103
Course Name	Applied Physics-I
Course Type	Diploma Course in Engineering
L-T-P	3-0-0
Name of Faculty	SACHIN PARTEEK SHARMA
Semester Start & End Dates	01-08-2026

STUDY AND EVALUATION SCHEME

Sr. No.	Name of the Subject	Th	DCS	Pr	Internal Assessment			External Assessment					Total Marks
					Th.	Pr	Total	Th.	Hrs.	Pr	Hrs.	Total	
1	APPLIED PHYSICS-i	3	0	0	50	0	50	100	3	0	3	100	150

Hour s	Unit & Topic of Discussion	Topic Details	Delivery Method
	Unit1: Units & Dimensions		Chalk & Blackboa rd And Projector
1	Physical Quantities		
2	System of units		
3	SI Units of Physical Quantities		
4	Dimensional Analysis		
5	Principle of Homogeinity		
6	Applications of Dimensional analysis		
7	Error		Chalk & Blackboa rd And
8	Types of error		
9	Revision of the Physical quantities		
	Units-II Force & Motion		
10	Scalars & Vectors		
11	Representation of a vector		
12	Types of vectors		

13	Linear Momentum and law of conservation of Linear momentum	Projector
14	Circular Motion	Chalk & Blackboard And Projector
15	Relation between angular velocity & Linear velocity	
16	Torque	
17	Angular Momentum & applications	
18	Moment of Inertia	
19	MOI Physical Significance	Chalk & Blackboard And Projector
	Unit-III Work, Power & Energy	
20	Work and Types of work	
21	Energy and types of energies	
22	Examples of Transformation of energy	
23	Derivation of KE & PE	Chalk & Blackboard And Projector
24	Mechanical Energy and Law of Conservation	
25	Power	
26	Numerical based on Power	
27	Revision of Work and related topics	
28	Revision of Numericals	
	Unit-IV Properties of Matter	
29	Elasticity & Plasticity	
30	Stress & Strain	
31	Types of Stress & Strain	
32	Hook's Law	
33	Modulus of Elasticity	
34	Pressure	
35	Types of pressure	
36	Revision of Properties of matter	
	Unit-V Heat & Temperature	Chalk & Talk
37	Heat and Temperature on the basis of Kinetic Theory	
38	Difference between heat & temperature	
39	Modes of transfer of heat	
40	Examples of Modes of transfer of heat	
41	Scales of temperature	
42	Relation between different scales of tem	
43	Conversion of one scale into another	
44	Numerical based on scales of temperature	
45	Revision of Heat & Temperature	

	Name of Book	Author Name	Publication
Prescribe	Text Book of Physics class XI	NCERT	NCERT

books

Concepts of Physics

HC VERMA

Bharti Bhavan Publication

Applied Physics-I

Manoj Kumar

True Edu

Signature of Subject Incharge

Sachin Parteek Sharma

Signature of Head of Department

Dr. Shalini Thakur

GOVERNMENT POLYTECHNIC PAONTA SAHIB

AT DHAULA KUAN, DISTT. SIRMOUR (HP) - 173031

DEPARTMENT NAME : Applied Sciences and Humanities



LESSON PLAN

Academic Year	2026 (August-Dec.)
Semester	First (Computer Engineering)
Category of Course	Engineering Science
Code No.	ES 107
Course Title	Basics of Information Technology & AI
Number of Credits (Teaching Load)	3 (L:3, T:0, P:0)
Name of Faculty	Jeevan Lal
Semester Start & End Dates	01.08.2026

STUDY AND EVALUATION SCHEME

Sr. No.	Name of the Subject	Th	Pr	Internal Assessment			External Assessment					Total Marks
				Th	Pr	Total	Th	Hrs	Pr	Hrs	Total	
1	Basics of Information Technology & AI	3	0	100	0	100						100

Hours	Unit & Topic of Discussion	Topic Details	Delivery Method
UNIT 1			
Day 1,2	Introduction to Computers and Information Technology	Computer Fundamentals: Evolution of computers;	White & Black Board / Digital media
Day 3		characteristics and applications of computers	
Day 4		data and information; hardware and software;	
Day 5,6		block diagram and functional units of a computer system.	
Day 7		Information Technology: Concept and applications of Information Technology (IT);	
Day 8		digital transformation; e-Governance, e-Commerce, e-Learning, e-Banking	
Day 9		Digital payments; cloud services; impact of IT on society	
UNIT 2			
Day 10	Computer Hardware	Computer hardware components – Motherboard, CPU,	White & Black Board / Digital media
Day 11		Memory, Storage Devices, Input Devices and Output Devices.	
Day 12		Central Processing Unit - Functions of CPU, Arithmetic Logic Unit (ALU), Control Unit (CU), Registers (overview), CPU Clock Speed	
Day 13		Input Devices – Keyboard, mouse, scanner, touch screen, microphone, web camera.	
Day 14		Output Devices – Monitor, printer, plotter, speaker, multimedia projector.	
Day 15,16,7		Memory and Storage – Units of memory, memory hierarchy, primary memory (RAM, ROM), cache memory (overview only).	
Day 18,19		secondary storage devices - Hard Disk Drive, optical disks (CD/DVD/Blu-ray), flash drives.	
Day 20,21		Computer ports and connectivity – USB, HDMI, audio ports, Bluetooth (overview), Wi-Fi (overview)	

UNIT 3

Day 22	Computer Software	Operating System – Functions,	
Day 23		Types of Operating Systems, GUI and CLI	
Day 24-26		System Software – Device drivers, Language translators, Utility software	
Day 27-28		Application Software – General-purpose software, Domain-specific software, Examples of popular application software (Web browsers,	
Day 29		Media players, Accounting software, CAD software)	
Day 31-32		Office Productivity Tools – Word Processing, Spreadsheet, Presentation,	
Day 33		PDF tools, Collaboration tools	

UNIT 4

Day 34-35	Cyber Security & Ethics	Cyber Security Fundamentals – Cyber threats, Malware, Virus, Worm, Trojan, Ransomware, Spyware, Phishing	
Day 36-37		Safe Computing Practices – Strong password, Multi-factor authentication, Safe browsing, Secure email, Data backup	
Day 38-39		Cyber Ethics – Digital citizenship, Copyright, Plagiarism, Privacy, Responsible use of social media	

UNIT 5

Day 40-41	Artificial Intelligence	Introduction – Concept of AI, History, AI vs ML vs Deep Learning (basic distinction)	
Day 42		Applications – Education, Healthcare, Agriculture, Manufacturing, Transportation, Finance, Smart Cities	
Day 43-44		Generative AI – Concept, Examples, Benefits, Limitations, Examples of Generative AI (ChatGPT, Gemini, Microsoft Copilot).	
Day 45		Responsible AI – Ethics, Bias, Privacy, Human oversight	

Prescribed Books :

Sr.No.	Name of Book	Author Name	Publication
1	Introduction to Computers	Peter Norton	McGraw-Hill Education
2	Fundamentals of Computers	V. Rajaraman	PHI Learning
3	Fundamentals of Information Technology	Alexis Leon and Mathews Leon	Leon Vikas
4	Foundations of Computing	Pradeep K. Sinha and Preeti Sinha	BPB Publications
5	Computer Fundamentals	Anita Goel	Pearson Education
6	Computer Fundamentals	R. S. Salaria	Khanna Publishing House
7	Artificial Intelligence	Pradeep K. Sinha and Preeti Sinha	BPB Publications

Jalran
Faculty

HOD / O/I
f. j. s.



GOVERNMENT POLYTECHNIC PAONTA SAHIB
AT DHAULA KUAN, DISTT. SIRMOUR (HP) - 173031
DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN

Academic Year	AUG - DEC 2026
Semester	FIRST (MECHANICAL ENGINEERING)
Course Code	ES103
Course Name	ENGINEERING GRAPHICS
Course Type	ENGINEERING SCIENCE
L-T-P	0-0-6
Name of Faculty	SANJEEV SHARMA & TEJENDER DEV
Semester Start & End Dates	01-08-2026 TO 28-11-2026

STUDY AND EVALUATION SCHEME

Sr. No.	Name of the Subject	Th	DCS	Pr	Internal Assessment			External Assessment					Total Marks
					Th	Pr	Total	Th	Hrs	Pr	Hrs	Total	
1	ENGINEERING GRAPHICS	0	0	6	0	50	50	0	-	100	0	150	150

Sheets	Unit & Topic of Discussion	Topic Details	Delivery Method
2 Sheets	Unit-1: Introduction to Engineering Drawing		
	Drawing Instruments and Materials	Introduction to engineering drawing instruments and materials; standard drawing sheet layouts and sizes (ISO A-series); standard sizes of drawing boards.	Chalk & Blackboard, Demonstration
	Conventions of Lines	Types of lines and their applications in engineering drawing as per BIS SP 46:2003 specifications.	Chalk & Blackboard, Drawing Practice
	Geometrical Constructions	Practice of vertical, horizontal and inclined lines; construction of triangles, rectangles, circles, ellipses, curves, hexagon and pentagon using drawing instruments.	Demonstration & Practice
	Lettering Techniques	Freehand and instrumental lettering (alphabets and numerals); freehand lettering (5, 8 & 12 mm); upper-case Gothic single-stroke vertical lettering (25-35 mm height, ratio 7:4).	Demonstration & Practice
1 Sheet	Unit-2: Dimensioning Techniques		
	Principles of Dimensioning	Necessity and principles of dimensioning; elements of dimensioning; dimensioning methods and arrangement of dimensions according to BIS standards.	Chalk & Blackboard, Demonstration

	Dimensioning of Engineering Features	Dimensioning of overall sizes, circles, chamfered surfaces, angles, tapered surfaces and holes equally spaced on P.C.D.	Drawing Practice
2 Sheets	Unit-3: Scales		
	Engineering Scales	Need and importance of engineering scales; types of scales; Representative Fraction (R.F.) and length of scale.	Chalk & Blackboard
	Plain and Diagonal Scales	Construction and applications of plain and diagonal scales.	Demonstration & Drawing Practice
3 Sheets	Unit-4: Orthographic Projections		
	Theory of Orthographic Projection	Concept and applications of orthographic projection.	Lecture & Demonstration
	Projection of Points	Projection of points in different quadrants.	Demonstration & Practice
	Projection of Straight Lines	Theoretical concept of projection of straight lines parallel or perpendicular to reference planes (1st & 3rd angle).	Chalk & Blackboard
	Orthographic Views of Objects	Three orthographic views of objects including minimum one sheet in third-angle projection.	Drawing Practice
2 Sheets	Unit-5: Sectioning		
	Conventional Representation	Conventional representation of materials; breaks for shafts, pipes, rectangular, square, angle, channel and rolled sections.	Lecture & Demonstration
	Sectional Orthographic Views	Full and half sectional views; introduction to partial (broken-out) and removed sections.	Drawing Practice
1 Sheet	Unit-6: Isometric Views		
	Fundamentals of Isometric Projection	Fundamentals of isometric projection and isometric scale (theory).	Lecture & Demonstration
	Isometric Views	Isometric views of combinations of regular solids such as cylinder, cone, cube and prism.	Drawing Practice
1 Sheet	Unit-7: Common Signs, Symbols & Conventions		
	Engineering Symbols and Conventions	Importance of engineering symbols, conventions and their applications.	Lecture & Demonstration
	Freehand Sketching of Symbols	Freehand sketching of standard Civil, Electrical and Mechanical engineering symbols and conventions.	Demonstration & Practice

	Name of Book	Author Name	Publication
Prescribed Books	Engineering Drawing	Dhawan, R. K	S. Chand and Company

Faculty

HOD