

PVCNSSK Govt. Polytechnic Bilaspur
Lesson Plan

Department: Applied Sciences and Humanities

Branch & Sem. : First Sem.

Session: August 2026- December2026

Subject :English & Comm.Skills-I

		Course –Mech. Engg. 1 st	Duration - 15 weeks				
		Theory					
Sr . N o.	Week	Period No.	Topics	Details	Instruc tion Refere nce	Additio nal Study Recom mende d	Rem ark
1	Week 2	1-3	Fundamentals of Communication Skills.	(i) Concept, Significance and Process of Communication, Levels		Essenti al of Busine ss commu nicatio n . Rajinde ra Pal J.S. Korlah alli- Sultan Chand and Sons	
	Week 3	4-6		Types of Communication: Verbal and Non- verbal; Formal and Informal, Barriers to Effective Communication and how to Overcome these,			
2	Week 4	7-9	Reading Skills ..	7C's for Effective Communication, Listening Skills : Significance and			
	Week 5	10-12		Essentials of Active Listening Skills, Speaking Skills: Significance			
	Week 6	13-15		Essentials of Effective Spoken Communication, Concept and Significance of Soft and Life Skills – Role of			

Himani
Himani
(Lect. English)

Dheer

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				Communication Skills in Developing Soft and Life Skills.Definition, Meaning and Significance of Reading Skills, Techniques of Reading: SQ3R method of Reading – Survey, Question, Read, Recite, Review, Skimming and Scanning, Extensive and Intensive Reading.			
3.	Week 7	16-18	Functional Grammar and Vocabulary	Literature and Textual Study for honing Reading Skills: Poetry: Daffodils by William Wordsworth.			
	Week 8	19-21		Prose: Life Sketch of Dr. A.P.J. Abdul Kalam. Short Story: With the Photographer by Stephen Leacock.			
	Week 9	22-24		Tenses, Change of Voice, Change of Narration,			
	Week 10	25-27		Article, Parts of Speech: Noun, Pronoun			
	Week 11	28-30		Adjective, Verb, Adverb, Conjunction, Preposition, Glossary of Administration terms			
	Week 12	31-33					

Himani
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Bhaku

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4.	Week 13	34-36	Writing Skill	Pair of Words, Synonyms, Antonyms.			
	Week 14	37-39		Significance and Essential Components of Writing Skills; Drafting Skills.			
	Week 15	40-42		: Significance of Notice, Circular, Official letters Circular, Official letters and Email etiquette, Writing Paragraphs through Outlines, Resume Writing and Forwarding Letter.			

Date:

Himani
Himani
(Lect. English)

Dr. Rakesh

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Applied Sciences and Humanities

**“PVC” NSSK GOVERNMENT POLYTECHNIC
BILASPUR AT KALOL, DISTT. BILASPUR (HP)**

**DEPARTMENT OF APPLIED SCIENCES
LESSON PLAN**

Academic Year	2026
Semester	1st
Subject Code	BS101
Subject Title	Mathematics-I
Name of Faculty	Parma Nand Sharma
Semester Start & End Dates	01.08.2026 – 28 .11. 2026

STUDY AND EVALUATION SCHEME

Sr. No.	Name of the Subject	Th	T	Pr	Credits	Internal Assessment			External Assessment					Total Marks
						Th	Pr	Total	Th	Hrs	Pr	Hrs	Total	
1	Mathematics-I	3	1	0	4	50	-	50	100		-	-		100

Subject Details:

Day	Unit & Topic of Discussion	Topic Details	Actual Date When the contents were taught
	Unit-1 : Basic Trigonometry, Trigonometric Formulae and Graphs		
Day 1	Basic Trigonometry	Concept of angles, measurement of angles in degrees, grades and radians and their conversions	
Day 2		Related Problems	
Day 3		radian measure formula (Arc Length Formula in radians) and simple related problems	
Day 4		Tutorial Class	
Day 5		radian measure formula (Arc Length Formula in radians) and simple related problems	
Day 6		Ratios of Allied angles (without proof) and related problems	
Day 7		Ratios of Allied angles (without proof) and related problems	
Day 8		Tutorial Class	
Day 9	Trigonometric Formulae and Graphs	Sum, difference formulae and their applications (without proof) and related problems.	
Day 10		Sum, difference formulae and their applications (without proof) and related problems.	

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Day 11	Trigonometric Formulae and Graphs	Product formulae (Transformation of product to sum, difference and vice versa) and related problems	
Day 12		TUTORIAL CLASS	
Day13		Product formulae (Transformation of product to sum, difference and vice versa) and related problems	
Day 14		Product formulae (Transformation of product to sum, difference and vice versa) and related problems	
Day 15		Graphs of sin x and cosx	
Day 16		TUTORIAL CLASS	
Day 17		1 st Class Test (30% syllabus)	
Day 18		Discussion on class test-I	
Unit-II Functions and Limits			
Day 19	Functions and Limits	Definition of function, Value of a function, Even and Odd Function and related problems.	
Day 20		TUTORIAL CLASS	
Day21			
Day 22		Function of a function and related problems Limit of a function ,Standard limits (With proof) $\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a} \quad \& \quad \lim_{x \rightarrow 0} \left(\frac{a^x - 1}{x} \right)$	
Day 23		Problems related to find the limit using the standard limits formulae.	
Day 24		TUTORIAL CLASS	
Day25		To find the limit of an algebraic function by using factorization method	
Day 26		To find the limit of an algebraic function by using Substitution method	
Day 27		To find the limit of an algebraic function by using rationalization method	
Day 28		TUTORIAL CLASS	
Day 29		Problems related to find limit of a function (Miscellaneous Questions)	
Unit III : Differentiation			
Day 30		Differentiation by first principle (x , sin x & cos x).	
Day 31		Rules of differentiation (sum, product, quotient, chain rule (Differentiation of function of a function))	
Day 32		TUTORIAL CLASS	
Day 33		Related Problems	
Day 34		Related Problems	
Day 35		Differentiation of trigonometric and inverse trigonometric functions	
Day 36		TUTORIAL CLASS	
Day 37		Differentiation of Logarithmic differentiation.	
Day 38		Related Problems	
Day 39		2nd Class Test (next 30 % syllabus)	

Unit-IV : Complex Numbers and Partial Fractions

Day 40	Complex Numbers and Partial Fractions	Tutorial Class	
Day 41		Complex Numbers: Definition, real and imaginary parts, conjugate of a complex number, algebra of complex numbers (Addition, Subtraction, Multiplication and Division)	
Day 42		Additive and multiplicative inverse, solution of a quadratic equation having Discriminant < 0	
Day 43		Geometrical Representation of a Complex Number - Argand Diagram, modulus & amplitude of a complex number and related Questions	
Day 44		TUTORIAL CLASS	
Day 45		Geometrical Representation of a Complex Number - Argand Diagram, modulus & amplitude of a complex number and related Questions	
Day 46		Polar form of a complex number.	
Day 47		Related Questions	
Day 48		TUTORIAL CLASS	
Day 49		Partial fractions: Definition of polynomial fraction (proper, improper fractions) and definition of partial fractions. Problems related to resolve a fraction (proper & improper fractions) into partial fraction with denominator containing non-repeated linear factors.	
Day 50		Related Questions	

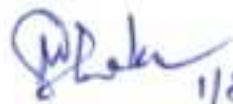
Unit - V: Permutations, Combinations and Binomial Theorem

Day 51	Permutations, Combinations and Binomial Theorem	Permutations and Combinations: Definition of $n!$, Special case: $0! = 1$, Simplification of factorial expressions	
Day 52		TUTORIAL CLASS	
Day 53		House Test (80% syllabus covered	
Day 54		Permutation: Meaning, formula nPr and simple numerical problems. Combination: Meaning, formula nCr and simple numerical problems.	
Day 55		Binomial theorem: Binomial theorem (without proof) for positive integral index (expansion and general form)	
Day 56		TUTORIAL CLASS	
Day 57		Binomial theorem: Binomial theorem (without proof) for positive integral index (expansion and general form)	
Day 58		Binomial theorem for any index (expansion without proof) first and second binomial approximation with applications to engineering problems.	
Day 59		Binomial theorem for any index (expansion without proof) first and second binomial approximation with applications to engineering problems.	
Day 60		TUTORIAL CLASS	

REFERENCE BOOKS AND SUGGESTED LEARNING RESOURCES

1. Applied Mathematics – I & II for Diploma Courses, R. D. Sharma - Dhanpat Rai Publications
2. Mathematics for Class XI & XII - NCERT Publication, New Delhi
3. Higher Engineering Mathematics, B.S. Grewal - Khanna Publishers, New Delhi
4. Engineering Mathematics, Reena Garg - Khanna Publishing House, New Delhi
5. Advanced Engineering Mathematics, Reena Garg & Chandrika Prasad, Khanna Publishing House

Faculty  31/7/26

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Session: August 2026- December2026

Subject : Mathematics-I

		Course –Mech. Engg. 1 st				Duration - 15 weeks	
		Theory					
Sr. No.	Week	Period No.	Topics	Details	Instruction Reference	Additional Study Recommended	Remarks
1	Week 2	1-4	Basic Trigonometry	(i) Concepts of angles , measurements of angles in degrees, grades and radians and their conversions,	Applied Mathematics-I by S. K. Sharma	Applied Mathematics-I by SS Sabharwal and Sunita Jain,	
	Week 3	5-8		(ii) Radian Measure formulae			
	Week 4	9-12		(iii) Ratios of Allied Angles , Trigonometric Formulae			
	Week 5	13-16		(iv)sum, difference formulae and their applications, product formulae			
	Week 6	17-18		(v) Graphs of sinx, cosx			
2	Week 6	19-20	Function and Limits	(i) Definition of function, Value of a function,			
	Week 7	21-24		(ii) Even and Odd functions, Function of a function, Limit of a function, standard limits.			
	Week 8	25-28		(iii) Problems related to find the limit of an algebraic function by using factorization method, substitution method .			
	Week 9	29		(iv) Rationalization method.			

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3.	Week 9	30-32	Differentiation	(i) Differentiation by first principle ($x^n, \sin x$ & $\cos x$),			
	Week 10	33-36		(ii) Rules of differentiation (sum, product, quotient, chain rule). Differentiation of trigonometric			
	Week 11	37-38		(iii) Inverse trigonometric functions, Logarithmic differentiation.			
4.	Week 11	39-40	Complex Number and partial fractions	(i) Complex numbers: Definition, real and Imaginary part of complex number, conjugate, modulus, amplitude,			
	Week 12	41-44		(ii) Addition, Subtraction, Multiplication and Division of complex numbers, Additive and multiplicative inverse.,			
	Week 13	45-48		(iii) solution of a quadratic equation having discriminant, Geometrical representation of a complex number- Argand Diagram, modulus and amplitude of a complex number, Polar form of a complex number.			
	Week 14	49		(ii) Partial fractions: Definition of polynomial fraction(proper, improper fractions) and definition of partial fractions. Problems related to resolve a fraction into partial fractions. With denominator containing non repeated linear factors.			
5.	Week 14	50-52	Permutations and combination & Binomial Theorem	(i) Permutations and combinations, Definition of ! , Special case: $0! = 1$, simplification of factorial expressions,			
	Week 15	53-56		(ii) Permutation: Meaning, Formula nPr and simple numerical problems. Combination: Meaning, formula nCr and simple numerical			

5

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Session: August 2026- December 2026

Subject : Mathematics-I

	Week 16	57-60		problems. (iii) Binomial theorem for positive integral index and any index, first and second binomial approximation with applications.			
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Date:


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Applied Sciences and Humanities

PVC NSSK Govt. Polytechnic Bilaspur at Kalol, Distt. Bilaspur (H.P)

Department of applied Science & Humanities

Course: Diploma

Branch: Mechanical Engg & Electrical Engg.

Session: 01 Aug 26 to 28 Nov 26

Subject: Applied Physics-I

Teacher: Pritam Chand

Laboratory: Physics Lab

Lesson plan for syllabus coverage:

Theory- 15 Weeks (45 Hours)

Practical- 15 Weeks (30 Hours)

Week No.	Lecture No.	Topic	Syllabus Detail
1st	1-3	Units and Dimensions	Physical quantities - fundamental and derived quantities, System of units: CGS, FPS, MKS, SI, Dimensional formulae and SI units of physical quantities - displacement, area, volume, density, velocity, acceleration, linear momentum
2nd	4-6	Units and Dimensions	Dimensional formulae and SI units of physical quantities - force, work, power, energy, pressure, stress & strain, Principle of homogeneity of dimensions, Application of dimensional analysis: checking the correctness of physical equation (three equations of motion),
3rd	7-9	Units and Dimensions	Types of errors - Instrumental, Systematic, Random and Gross error.
4th	10-12	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) Linear momentum
5th	13-15	Force and motion	Law of conservation of linear momentum with derivation, angular displacement, angular velocity, angular acceleration, relation between linear and angular velocity,
6th	16-18	Force and motion	Torque, Angular momentum, Law of conservation of angular momentum and its applications, moment of inertia and its physical significance.
7th	19-21	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
8th	22-24	Work, Power and Energy	Kinetic energy - definition, examples, formula and its derivation, Potential energy - definition, examples, formula and its derivation

Pritam Chand
01.8.26

9th	25-27	Work, Power and Energy	Law of conservation of mechanical energy for freely falling bodies (with derivation), Power and simple numerical problems based on Power.
10th	28-30	Properties of Matter	Elasticity and plasticity - definition, Definition of stress and strain, Types of stress and strain
11th	31-33	Properties of Matter	Hooke's law, Modulus of elasticity and its types
12th	34-36	Properties of Matter	Pressure - definition, atmospheric pressure, gauge pressure, absolute pressure.
13th	37-39	Heat and temperature	Definition of heat and temperature (on the basis of kinetic theory), Difference between heat and temperature,
14th	40-42	Heat and temperature	Modes of transfer of heat- conduction, convection and radiation with examples,
15th	43-45	Heat and temperature	Different scales of temperature and their relationship, Numerical problems based on conversion of temperature into various scales.

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01.8.26

(Pritam Chand)
Lecturer Physics

Mohan Singh

(Mohan Singh)
HOD
AS&H

GP Bilaspur at Kalol

PLANNING OF THEORY CONTENT FOR THE FIRST SEMESTER E.E. & M.E.COMMENCING
W.E.F. 01-08-2026 UP TO 28-11-2026

DEPARTMENT : APPLIED SCIENCES AND HUMANITIES

3 Hrs/Week

COURSE : Diploma SUBJECT: APPLIED CHEMISTRY (BS-106) Credit :3

Week	Periods	Content Planned	Remarks
1	1 to 3	Fundamental Particles of atoms: Electron, Protons, Neutrons	
		Bohr's Model of an atom (Postulates, Success and Limitation)	
		Atomic Number, atomic mass, isotopes, isobars and isotones, Concept of orbitals, difference between orbit and orbitals,	
2	4 to 6	Shapes of s and p orbitals, quantum Numbers (Significance only), Aufbau's principle, Pauli's exclusion principles, Hund's rule of maximum multiplicity	
		electronic configuration of elements with atomic number (Z) 1 to 30 only,	
3	7 to 9	Difference between sigma and pie bond	
		Revision as per doubts of Students	
		Definition of Solution, Solute and Solvent with examples, Methods to express the concentration of solutions -Molarity,	
4	10 to 12	PH of solution, industrial application of PH solution, Definition of buffer solution and industrial application of buffer solution.	
		Definition of Hard and soft water, Types of hardness,	
5	13 to 15	Units of hardness (mg/l and ppm), and simple numerical based on hardness,	
		Disadvantages caused by use of hard water in domestic and industrial use	
		removal of hardness -permutit process, Characteristics of drinking water	
6	16 to 18	Revision as per doubts of Students	
		Electronic concept of oxidation, reduction and Redox reaction, Definition of Electrolyte and non -electrolyte with suitable	
		Faradays law of Electrolysis (First And Second)	
7	19 to 21	Electrometallurgy, Electroplating, Electro- refining	
		Introduction to corrosion of metals -definition, Internal corrosion preventive measure (purification, alloying and heat treatment)	
		External corrosion preventive measure: Metal coating (anodic, cathodic).	
8	22 to 24	Revision as per doubts of Students	
		Natural occurrence of metals- minerals, ores; ores of iron, aluminum and copper	
		Definition of Gangue, Flux, Metallurgy, Pyrometallurgy, Electrometallurgy, & Hydrometallurgy a brief account of general principles of metallurgy- Crushing, Grinding; Concentration of ore (Froth flotation process)	

9	25 to 27	Extraction of metal (Roasting, Calcination & Smelting), Refining (Electrorefining); Extraction of iron from their Haematite ore by using blast furnace in brief along with diagram	
		Alloys- definition, Ferrous and non- ferrous alloy, purpose of making alloy.	
		Definition of Polymer, Monomer, Degree of Polymerization, name of monomer	
10	28 to 30	Simple reaction involved in preparation of Polythene, PVC, PTFE, PS and Nylon-6,6 only.	
		Revision as per doubts of Students	
11	31 to 33	Definition of fuels, Classification of fuels, Characteristics of a good fuel	
		Calculation of HCV and LCV by using Dulong's formulas	
		Fuel rating (octane and cetane numbers),	
		Chemical composition, Calorific value application and diagram of water gas	
12	34 to 36	Chemical composition, Calorific value application and diagram of Producer gas	
13	37 to 39	Chemical composition, Calorific value application and diagram of Bio gas	
		Revision as per doubts of Students	
		Definition of Lubricants, Function of good lubricants	
14	40 to 42	Physical properties (Viscosity, viscosity index, flash and fire point)	
		Chemical properties (TAN, Saponification value) of lubricants	
15	43 to 45	Revision as per doubts of Students	
		Revision as per doubts of Students	
		Revision as per doubts of Students	

Name of Faculty :


 Mohan Singh
 H.O.D. AS&H
 G.P.Bilaspur at Kalol

Lesson Plan Theory

Branch: Mechanical Engineering

Semester : 1st Semester Mechanical Engg.(Diploma)

Subject : Basics of Information Technology and AI

Session : 2026(Aug-Dec,2026)

Teacher : Er. Sudhir Sen

Chapter	Month	Week	Period	Chapter Description	Detail of Contents	Remarks
1	August	3rd	11,13, 14	UNIT 1: Introduction to Computers and Information Technology	1.1 Computer Fundamentals: Evolution of computers; characteristics and applications of computers; data and information hardware and software; block diagram and functional units of a computer system.	
		4th	18,20, 25,27, 28		1.2. Information Technology: Concept and applications of Information Technology (IT); digital transformation, e-Governance, e-Commerce, e-Learning, e-Banking, digital payments, cloud services; impact of IT on society	
		1st	1,3		2.1. Computer hardware components - Motherboard, CPU, Memory, Storage Devices, Input Devices and Output Devices.	
		2nd	8,10,11		2.2. Central Processing Unit - Functions of CPU, Arithmetic Logic Unit (ALU), Control Unit (CU), Registers (overview), CPU Clock Speed	
		3rd	15,17, 18		2.3. Input Devices - Keyboard, mouse, scanner, touch screen, microphone, web camera, 2.4. Output Devices - Monitor, printer, plotter, speaker, multimedia projector. Class Test 1	
2	September	4th	22,24, 25	Unit 2: Computer Hardware	2.5. Memory and Storage - Units of memory, memory hierarchy, primary memory (RAM,ROM), cache memory (overview only), secondary storage devices - Hard Disk Drive, Optical disks (CD/DVD/Blu-ray), flash drives	
		5th	29		2.6. Computer ports and connectivity - USB, HDMI, audio ports, Bluetooth (overview), Wi-Fi (overview)	
		1st	1		3.1. Operating System - Functions, Types of Operating Systems, GUI and CLI	
		2nd	6,8,9		3.2. System Software - Device drivers, language translators, Utility software	
		3rd	13,15, 16		3.3. Application Software - General-purpose software, Domain-specific software 2nd Class Test	
3	October	4th	22,23	Unit 3: Computer Software	Examples of popular application software (Web browsers, Media players, Accounting , software, CAD software)	
		5th	27,29, 30		Office Productivity Tools - Word Processing, Spreadsheet, Presentation, PDF tools, Collaboration tools	
		1st	2,5,6		4.1. Cyber Security Fundamentals - Cyber threats, Malware, Virus, Worm, Trojan,Ransomware, Spyware, Phishing	
		2nd	9,12,13		4.2. Safe Computing Practices - Strong password, Multi-factor authentication, Safe browsing, Secure email, Data backup	
		3rd	16,19, 20		4.3. Cyber Ethics - Digital citizenship, Copyright, Plagiarism, Privacy, Responsible use of social media	
4	November	4th	23,26, 27	Unit 4: Cyber Security & Ethics Unit 5: Artificial Intelligence	HOUSE TEST	
		1st	2,5,6		5.1. Introduction - Concept of AI, History, AI vs ML vs Deep Learning (basic distinction)	
		2nd	9,12,13		Applications - Education, Healthcare, Agriculture, Manufacturing, Transportation,	
		3rd	16,19, 20		5.3. Generative AI - Concept, Examples, Benefits, Limitations, Examples of Generative AI (ChatGPT, Gemini, Microsoft Copilot)	
		4th	23,26, 27		5.4. Responsible AI - Ethics, Bias, Privacy, Human oversight	

Session Closed on 28.11.2026

Signature of Teacher



Signature of H.O.D.

