

Sr. No.	Date	Name of chapter	Contents to be taught	Remark
1	21/08/23	Unit-1 Communication: Theory and Practice	Basics of communication: Introduction, meaning and definition , process of communication ,	
2	22/08/23		Types of communication: formal and informal	
3	23/08/23		verbal, non-verbal communication	
4	28/08/23		Barriers to effective communication.	
5	29/08/23		7Cs for effective communication (considerate, concrete, concise, clear, complete, correct, courteous).	
6	04/09/23		Art of Effective communication, A. Choosing words B. Voice C. Modulation D. Clarity E. Time F. Simplification of words	
7	05/09/23		5. Technical Communication	
8	06/09/23	Unit-2 Soft Skills for Professional Excellence	Introduction: Soft Skills and Hard Skills	
9	11/09/23		Importance of soft skills.	
10	12/09/23		Life skills: Self-awareness and Self-analysis, adaptability, resilience, emotional intelligence and empathy etc.	
11	13/09/23		Applying soft skills across cultures.	
12	18/09/23	Unit-3: Reading Comprehension	Comprehension, vocabulary enhancement and grammar exercises based on reading of the following texts:	
13	19/09/23		Comprehension, vocabulary enhancement and grammar exercises based on reading of the following texts:	
14	20/09/23		Comprehension, vocabulary enhancement and grammar exercises based on reading of the following texts:	
15	25/09/23		CT-I	
16	26/09/23	Section-I Short Stories	I. "The Gift of the Magi" by O. Henry,	

17	27/10/23		1. "The Gift of the Magi" by O. Henry.	
18	03/10/23		2. "Uncle Podger Hangs a Picture" Jerome K. Jerome.	
19	04/10/23		2. "Uncle Podger Hangs a Picture" Jerome K. Jerome.	
20	09/10/23		2. "Uncle Podger Hangs a Picture" Jerome K. Jerome.	
21	10/10/23	Section-2 Poetry	1. "Night of the Scorpion" by Nissim Ezekiel.	
22	11/10/23		"Stopping by Woods on a Snowy Evening" by Robert Frost.	
23	16/10/23		"Where the Mind Is Without Fear" by Rabindranath Tagore.	
24	17/10/23	Unit-4 Professional Writing	1. The art of précis writing.	
25	18/10/23		Letters: business and personal	
26	23/10/23		CT -2	
27	25/10/23		Letters: business and personal	
28	30/10/23		Letters: business and personal	
29	31/10/23		Drafting e-mail, notices, minutes of a meeting etc.	
30	06/11/23 07/11/23		House test	
31	20/11/23	Unit-5 Vocabulary and Gramm	Glossary of administrative terms (English and Hindi).	
32	21/11/23		One-word substitution, Idioms and phrases etc	
33	22/11/23		Parts of speech,	
34	28/11/23		active and passive voice	
35	29/11/23		tenses	
36	04/12/23		Punctuation	

Sr. No.	Date	Name of chapter	Contents to be taught	Remark
1	21/8/23	Unit 1 . Trigonometry	Introduction of Trigonometry	
2	22/8/23		Concept of angles	
3	23/8/23		measurement of angles in degrees	
4	25/8/23		measurement of angles in grades and radians	
5	26/8/23		conversion of angles	
6	28/8/23		conversion of angles	
7	29/8/23		T-Ratios of Allied angles	
8	30/8/23		Sum and difference formulae	
9	1/9/23		Applications of Sum and difference formulae	
10	2/9/23		Applications of Sum and difference formulae	
11	3/9/23		Product formulae	
12	5/9/23		Transformation of product to sum,difference and vice versa	
13	6/9/23		Transformation of product to sum,difference and vice versa	
14	8/9/23		T- Ratios of multiple angles	
15	11/9/23		T- Ratios of multiple angles	
16	12/9/23		T - Ratios of sub-multiple angles (2A, 3A, A/2).	
17	13/9/23		T - Ratios of sub-multiple angles (2A, 3A, A/2).	
18	15/9/23		Graphs of $\sin x$ , Graphs of $\cos x$	
19	16/9/23		Definition of function and its introduction	
20	18/9/23	Unit 2. Differential Calculus	Concept of limits	
21	19/9/23		Four standard limits and its proof	
22	20/9/23		Four standard limits and its proof	
23	22/9/23		Differentiation by definition of $x^n$ & $\cos x$	
24	23/9/23		Differentiation by definition of $\sin x$ & $e^x$	
25	25/9/23		Differentiation by definition of $\tan x$	
26	26/9/23		CT-1	
27	27/9/23		Differentiation of sum of functions.	
28	29/9/23		Differentiation of product of functions	
29	30/9/23		Differentiation of quotient of functions.	
30	3/10/23		Differentiation of function of a function.	
31	4/10/23		Differentiation of trigonometric functions	
32	6/10/23		Differentiation of trigonometric functions	
33	7/10/23		Differentiation of inverse trigonometric functions	
34	9/10/23		Differentiation of Inverse trigonometric functions	
35	10/10/23		Differentiation of Logarithmic differentiation	
36	11/10/23		Introduction of complex numbers	
37	13/10/23	Unit -3 Algebra (1. complex Numbers )	Real and imaginary parts of complex number	
38	16/10/23		Polar and cartesian representation of a complex number	
39	17/10/23		Conversion of polar and cartesian from one another	
40	18/10/23		conjugate of a complex number	
41	20/10/23		modulus and amplitude of a complex number	
42	21/10/23		addition and subtraction of complex numbers	
43	23/10/23		multiplication and division of complex numbers	
44	25/10/23		De moivier's theorem	
45	27/10/23		Application of De moivier's theorem	
46	30/10/23		CT-2	
47	31/10/23		Application of De moivier's theorem	
48	1/11/23		Definition of polynomial fraction (proper, improper)	
49	3/11/23	2. Partial fractions	Introduction of partial fraction	
50	9/11/23		partial fractions (non - repeated linear factors)	
51	6/11/23-8/11/23		House test	
52	10/11/23		partial fractions ( repeated linear factors)	
53	17/11/23		partial fractions (repeated linear factors)	
54	18/11/23	3. Permutations & Combinations	Introduction of Permutations and Combinations	
55	23/11/23		Problems of $nPr$	
56	21/11/23		Problems of $nPr$	
57	22/11/23		Problems of $nCr$	
58	24/11/23		Problems of $nCr$	
59	25/11/23	4. Binomial Theorem	Introduction of Binomial theorem	
60	28/11/23		Binomial theorem for positive integral index	
61	29/11/23		binomial theorem for any index	
62	1/12/23		binomial theorem for any index	
63	2/12/23		first and second binomial approximation	
64	4/12/23		Engineering problems on binomial theorem	

Sr. No.	Date	Name of chapter	Contents to be taught	Remark
1	24/8/23	Basic Elements of Drawing	Drawing Instruments & supporting materials , method to use them with applications Draw horizontal , vertical , 30 degrees , 45 degrees , 60 & 75 degrees lines , different types of lines , dimensioning styles using Tee & set squares / drafter	
2	25-8-23		write Alphabets and numerals in T.4 scale (vertical)	
3	31-8-23		write Alphabets and numerals in T.4 scale (vertical)	
4	1/9/23			
5	8-9-23		Draw some problems on Engineering plain scale.	
6	14-9-23		Draw some problems on Engineering dingpol scale.	
7	15-9-23	Orthographic Projections	Draw some problems on orthographic projections using first angle method of projection having plain and slanting surfaces	
8	21-9-23		Draw some problems on orthographic projections using first angle method of projection having cylindrical surfaces, ribs and slots.	
9	22-9-23		Draw some problems on orthographic projections using first angle method of projection having cylindrical surfaces, ribs and slots.	
10	28-9-23		CT-1	
11	29-9-23	Isometric Projections	Draw some problems on isometric view of simple objects having plain and slanting and cylindrical surface by using natural scale (cube , cone , cylinder)	
12	5/10/23		Draw some problems on isometric view of simple objects having plain and slanting and cylindrical surface by using natural scale (cube , cone , cylinder)	
13	6-10-23		Draw some problems on isometric view of simple objects having plain and slanting and cylindrical surface by using natural scale (cube , cone , cylinder)	
14	12-10-23		Draw some problems on isometric view of simple objects having plain and slanting and cylindrical surface by using natural scale (cube , cone , cylinder)	
15	13-10-23	Free hand sketches of engineering elem	Free hand sketches / conventional representation of machine elements such as thread profiles , nuts , bolts , studs , set screws , washers , locking arrangements.	
16	14-10-23		Free hand sketches / conventional representation of machine elements such as thread profiles , nuts , bolts , studs , set screws , washers , locking arrangements.	
17	20-10-23		Problem based on learning : complete the orthographic views	
18	26-10-23		Problem based on learning : complete the orthographic views	
19	27-10-23		CT-2	
20	2/11/23	Computer Aided Drafting Interface	Introduction of CAD , Components of Auto CAD surface window, file features , setting up new drawing	
21	3-11-23	Computer Aided Drafting	Draw basic 2D entities : rectangle, rhombus, polygon using Auto CAD	
22	9-11-23		Draw basic 2D entities : circles , arcs, circular using Auto CAD	
23	10-11-23		Draw basic 2D entities : circular & rectangular array using Auto CAD	
24	16-11-23		Draw blocks of 2D entities comprises of rectangle, rombus, polygon, circles, arcs, circular and rectangular array blocks using Auto Cad	
25	17-11-23		Draw blocks of 2D entities comprises of rectangle, rombus, polygon, circles, arcs, circular and rectangular array blocks using Auto Cad	
26	23-11-23		Draw basic branch specific component 2D using AutoCad	
27	24-11-23		Draw basic branch specific component 2D using AutoCad	
28	30-11-23		Draw complex branch specific components in 2D using AutoCAD	
29	1/12/23		Draw complex branch specific components in 2D using AutoCAD	

**Lesson Plan For : APPLIED Physics -1**

Sem. 1ST

Branch : APPLIED SCIENCES

Sr. No.	Date	Name of chapter	Contents to be taught	Remark
1	21/8/2023	1. Units and Dimensions	1.1 Physical quantities Units - fundamental and derived units, systems of units	
2	22/8/2023		1.2 Dimensions and dimensional formulae of physical quantities	
3	23/8/2023		1.2 Dimensions and dimensional formulae of physical quantities	
4	24/8/2023		1.3 Principle of homogeneity of dimensions	
5	28/8/2023		1.4 Dimensional equations and their applications, conversion from one system of units to other,	
6	29/8/2023		1.4 checking of dimensional equations and derivation of simple equations)	
7	31/8/2023		1.5 Limitations of dimensional analysis	
8	4/9/2023		1.6 Error in measurement, absolute error, relative error, rules for representing significant figures	
9	5/9/2023		1.6 Error in measurement, absolute error, relative error, rules for representing significant figures	
10	6/9/2023	2. Force and Motion	2.1 Scalar and vector quantities – examples, representation of vector, types of vectors	
11	11/9/2023		2.2 Addition and Subtraction of Vectors, Triangle and Parallelogram law (Statement only), Scalar and Vector Product.	
12	12/9/2023		2.3 Resolution of Vectors and its application to lawn roller.	
13	13/9/2023		2.4 Force, Momentum	
14	14/9/2023		2.4 Statement and Derivation of Statement and Derivation of Conservation of linear momentum, its applications such as recoil of gun	
15	16/9/2023		2.5 Impulse and Its Applications	
16	19/9/2023			

17	20   9   2023	2.5 Circular motion, definition of angular displacement, angular velocity, angular acceleration, frequency, time period
18	21   10   2023	2.7 Relation between linear and angular velocity, linear acceleration and angular acceleration
19	25   9   2023	CT-1
20	26   9   2023	2.8 Expression and Applications of Centripetal and centrifugal forces with examples such as
21	27   9   2023	2.8 banking of roads and bending of cyclist
22	28   9   2023	3.1 Work: and its units, examples of zero work, positive work and negative work
23	3   10   2023	3.2 Friction: modern concept, types, laws of limiting friction, Coefficient of friction
24	4   10   2023	3.2 Engineering Applications of friction
25	5   10   2023	3.3 Work done in moving an object on horizontal and inclined plane for rough and plane surfaces
26	9   10   2023	3.3 its applications
27	10   10   2023	3.4 Energy and its units: Kinetic energy and gravitational potential energy with examples
28	11   10   2023	3.4 Derivation of kinetic energy and potential energy
29	12   10   2023	3.5 Principle of conservation of mechanical energy for freely falling bodies
30	16   10   2023	3.5 examples of transformation of energy.
31	17   10   2023	3.6 Power and its units, calculation of power in numerical problems
32	18   10   2023	4.1 Concept of translatory and rotatory motions with examples
33	19   10   2023	4 Rotational Motion
34	23   10   2023	4.2 Definition of torque and angular momentum and their examples
35	25   10   2023	4.3 Conservation of angular momentum (quantitative) and its examples
36	26   10   2023	4.4 Moment of Inertia and Its physical significance, radius of gyration for rigid body.

37	30/10/2023	4.4 theorem of parallel and perpendicular axes (statements only), Moment of inertia of rod, disc and ring.
38	31/10/2023	CT-2
39	21/11/2023	5. Properties of Matter
40	6/11/2023	5.1 Elasticity: definition of stress and strain, different types of modulii of elasticity, Hooke's law, HOUSE TEST
41	9/11/2023	5.1 significance of stress strain curve
42	16/11/2023	5.2 Pressure: definition, its units, atmospheric pressure, gauge pressure, absolute pressure, Fortin's
43	20/11/2023	Barometer and its applications
44	21/11/2023	5.3 Surface tension: concept, its units, angle of contact 5.3Ascent Formula (No derivation), 5.3 applications of surface tension, effect of temperature and impurity on surface tension
45	22/11/2023	6.1 Difference between heat and temperature 6.2 Modes of transfer of heat (Conduction, convection and radiation with examples) 6.3 Different scales of temperature and their relationship
46	23/11/2023	6.4 Types of Thermometer (Mercury Thermometer, Bimetallic Thermometer, Platinum resistance 6.4Thermometer, Pyrometer)
47	28/11/2023	6. Thermometry
48	29/11/2023	6.5 Expansion of solids, liquids and gases, coefficient of linear, surface
49	30/11/2023	6.5 cubical expansions and their relation among them.
50	4/12/2023	6.6 Concept of Co-efficient of thermal conductivity
		Revision



# Lesson Plans

## Applied Chemistry - (BS 105)

No Chapter	Topic	Date
1. <u>Atomic Structure</u>	<p>Fundament particles of atoms : Electron, proton Neutron (definition) Atomic structure Bohr's Theory, successes and limitations expression of energy and radius to be emitted.</p> <p>Hydrogen spectrum explanation based on Bohr's Model of atom, Heisenberg uncertainty principle.</p> <p>Quantum Numbers - orbital concept, shape of s, p orbital, difference between orbit and orbital.</p> <p>Pauli's exclusion principle, Hund's rule of maximum multiplicity Aufbau rule.</p> <p>Electronic Configuration (<math>Z=1</math> to <math>30</math>)</p>	21/08/2023 23/08/2023 25/08/23 26/08/23 28/08/23
2. <u>Chemical bonding And Solution.</u>	<ul style="list-style-type: none"> <li>Concept of chemical bonding - Cause of chemical bonding, types of bonds</li> <li>Ionic bonding (NaCl example).</li> <li>Lewis Concept of Covalent bond (<math>H_2</math>, <math>F_2</math>, <math>HF</math>).</li> <li>Electronegativity, Difference between Sigma and pi bond</li> </ul>	01/09/23 02/09/23 04/09/23
	<ul style="list-style-type: none"> <li>electron Sea model of metallic bond</li> <li>idea of solute, solvent and solution.</li> </ul>	06/09/23

# lesson Plans

Sr.No	Chapter	Topic	Dates
		Method to express the concentration of solution - Molarity ( $M = \text{mole per liter}$ ).	08/09/23
		Molarity, Mass percentage (Numerical excluded)	11/09/23
3.	<u>Electro-chemistry And Corrosion</u>	Electronic Concept of oxidation, reduction And redox reaction.	13/09/23
		Definition of terms: electrolytes, Non-electrolytes with suitable examples.	15/09/23
		Faraday's Laws of electrolysis And simple Numerical problems.	16/09/23
		Industrial Application of electrolysis. • electro-metallurgy • Electroplating • Electrolytic refining	18/09/23
		Application of redox reaction in electrochemical cells - primary cells - Day secondary cell - commercially used lead Acid storage battery.	20/09/23
		Introduction to Corrosion of metals definition, types of corrosion electrochemical $H_2$ liberation And $O_2$ absorption	22/09/23
		Mechanism of electrochemical corrosion, Internal of electro corrosion preventive measures - purification.	23/09/23
		Alloying and treatment and external Corrosion preventive measure, metal (Anodic, cathodic) Coatings.	25/09/23
			27/09/23

# Lesson plan

Sr.No	Chapter	Topic	Dates
4.	<u>Engineering Materials</u>	<p>Natural occurrence of metals-minerals ores of iron, Aluminium And Copper, gangue (Matrix), flux, slag.</p> <p>Metallurgy- brief account of general principles of metallurgy.</p> <ul style="list-style-type: none"> <li>• Crushing And grinding • Concentration of ore (levigation, floatation, Magnetic separation).</li> <li>• Extraction (Roasting and calcinations And smelting) • Refining (electro refining, zone refining).</li> </ul> <p>Extraction of iron from haematite ore using blast furnace along with reactions.</p> <p>Alloys - definition, purpose of alloying, ferrous alloys (Invar-tet) And non-ferrous (simple-Brazz and Bronze, Nichrome).</p> <p>Duralumin Magnesium) with suitable examples, properties And applications</p>	29/09/23 04/10/23 06/10/23 07/10/23 09/10/23 11/10/23 13/10/23
5.	<u>Water</u>	<p>Classification of soft and hard water based on Soap test, salts Causing water hardness.</p> <p>Units of hardness (mg/l and ppm) and simple numerical on water hardness, cause of poor lathering of soap in hard water.</p>	16/10/23 18/10/23

# Lesson Plans

No	Chapter	Topic	Dates
		Problem Caused by the use of hard water in boiler (scale and sludge, forming And priming, corrosion).	20/10/23
		Water softening techniques - Zeolite process in Municipal water treatment.	21/10/23
		(in brief only) - sterilization - sedimentation Coagulation filtration, sterilization properties of water used for human consumption for drinking And cooking purpose from any water sources and Indian standard specification of drinking water.	23/10/23
6.	<u>Fuels</u>	<p>Definition of fuel and combustion of fuel, classification of fuels.</p> <p>Calorific values (Hcv and Lcv), calculation of Hcv and Lcv using Dulong's formula</p> <p>Characteristics of good fuel.</p> <ul style="list-style-type: none"> <li>• petrol and diesel - fuel rating (Octane And Centane Number).</li> <li>• Chemical composition, calorific values</li> <li>• Application of LPG, CNG, water gas producer gas and biogas</li> </ul>	27/10/23 30/10/23 01/11/23 03/11/23 04/11/23 06/11/23 08/11/23
7.	<u>Lubrication</u>	function and characteristic properties of good lubricant.	10/11/23

# Lesson plan

No	Chapter	Topic	Dates
		Classification with examples.	17/11/23
		Lubrication mechanism - hydrodynamic And boundary lubrication.	18/11/23
		Physical properties (viscosity and viscosity) Index.	18/11/23
		Oiliness, flash and fire point, cloud and pour point only.	
		Chemical properties (Acid number And total Acid number).	29/11/23
		Saponification value of lubricants	
8.	<u>Polymers</u>	Monomers, homo And copolymers, degree of polymerization.	01/12/23
		Simple reaction involved in preparation and their application.	
		Thermoplastics And thermo setting plastics (using polythene, PVC, PS, PTFE, Nylon 6,6 And Bakelite only.).	02/12/23
		Vulcanization of rubber And properties of vulcanised rubber	04/12/23