

LESSON PLAN

Name of Faculty	Kharatti Lal
Department	Applied Sciences And Humanities
Semester	1st
Subject	Mathematics- I
Lesson Plan for the Duration	August - December 2026

Week	Unit	Detail of Topics
1st (01 Aug -07 Aug)		Orientation Programme
2nd (08 Aug -18 Aug)	Trigonometry	Concept of angles, measurement of angles in degrees, grades and radians and their conversions.
3rd (19 Aug.-25 Aug.)	Trigonometry	T-Ratios of Allied angles (without proof),Sum,difference formulae and their applications (without proof)
4th (26 Aug.-01 Sept.)	Trigonometry	Product Formulae (Transformation of Product to Sum ,Difference and vice - versa), T-Ratio of multiple angles ,sub multiple angles (2A,3A,A/2).Graphs of $\sin x$, $\cos x$.
5th (02 Sept.-08 Sept.)	Function and Limits Differentiation	Definition of function ,Concept of limits .Four standard limits. Lim
Class Test - I		2nd Week of September
6th (09 Sept.-16 Sept.)	Differentiation	Differentiation by definition of x , $\sin x$, $\cos x$, $\tan x$, e^x .Differentiation of sum ,Product of functions .
7th (17 Sept.-23 Sept.)	Differentiation	Differentiation of quotient of functions ,Differentiation of function of a function
8th (24 Sept.-30 Sept.)	Differentiation	Differentiation of trigonometric and inverse trigonometric functions, Logarithmic differentiation .
9th (01 Oct.-09 Oct.)	Complex Number & P.F	Complex Number : Definition ,real and imaginary parts of a complex number, Polar and cartesian representation of complex number and its conversion from one form to other. Conjugate of complex number.
10th (10 Oct.-22 Oct.)	Complex Number & P. F	Modulus and Amplitude of a complex number.Addition, Subtraction,Multiplication and Division of a complex number . De- Moivre's theorem, its application.Partial Fraction
Class Test - II		3rd Week of October
11th (23 Oct.-29 Oct.)	Algebra	Partial Fractions : Definition of polynomial fraction proper & improper fractions and definition of partial fractions .To resolve proper into partial fraction with denominator containing non- repeated linear factors ,repeated linear factors
12th (30 Oct.-06 Nov.)	Algebra	Value of $P(n,r)$ and $C(n,r)$
House Test		2nd Week of November
13th (14 Nov.-20 Nov.)	Binomial Theorem	Binomial theorem : Binomial theorem (without proof) for positive integral index (expansion and general form) binomial theorem for any index (expansion without proof) .
14th (21 Nov.-26 Nov.)	Binomial Theorem	First and second binomial approximation with applications to engineering Problems.
14th (21 Nov.-26 Nov.)	Permutation and Combination	Permutation and Combination of $n!$, Special case $0! = 1$ Simplification of Factorial expression Permutation meaning formula nPr and simple numerical problem Combination meaning formula nCr and simple numerical problems.


Signature of Teacher


HOD/ OIC Applied Sciences & Humanities
Anil Kumar

LESSON PLAN

Name of Faculty		Ankaj Thakur
Department		Applied Science & Humanities
Semester		1st
Subject		Applied Chemistry
Lesson Plan for the Duration		August-November 2026
Week	Topic	Details Of Topics
(1 August- 7 August)		Orientation Programme
1st (10 August-17 August)	UNIT-I Chemical Structure & Chemical Bonding	Fundamental Particles of atoms: Electron, Proton, Neutron (definitions only), Bohr's Model of an atom (Postulates, Success and Limitation), atomic number, atomic mass number, isotopes, isobars and isotones, Concept of orbitals, difference between orbit and orbitals, shapes of s and p orbitals
2nd (18 August-25 August)		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.
3rd (26 August-01 Sept.)		Chemical Bonding - cause of chemical bonding, Types of Bond: Ionic bond (NaCl), covalent bond (O ₂ , N ₂ , H ₂), difference between sigma and pi (π) bond.
4th (02 Sept-09 Sept.)	UNIT-II Solutions & Water	Definition of Solution, Solute and Solvent with examples, Methods to express the concentration of solutions - Molarity, Molality and Normality (Numerical excluded), pH of solution, industrial applications of pH solution, Definition of buffer solution and industrial applications of buffer solution
5th (10 Sept-17 Sept.)		Definition of Hard and soft water, Types of hardness, Units of hardness (mg/ltr 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
6th (18 Sept-24 Sept.)	UNIT-III Electrochemistry & Corrosion	Electronic concept of oxidation, reduction and Redox reaction, Definition of Electrolyte and non-electrolyte with suitable examples, Faradays law of Electrolysis and industrial application of electrolysis (Electrometallurgy, Electroplating, Electro - refining)
7th (25 Sept.-01 Oct.)		Introduction to corrosion of metals - definition, Internal corrosion preventive measure (purification, alloying and heat treatment) and External corrosion preventive measure: Metal coating (anodic and cathodic).
8th (03 Oct. -09 Oct.)	UNIT-IV Engineering Materials & Polymers	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)
9th (12 Oct.-17 Oct.)		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.
10th (19 Oct.-27 Oct.)		Definition of Polymer, Monomer, Degree of Polymerization, name of monomer and simple reaction involved in preparation of Polythene, PVC, PTFE, PS and Nylon-6,6 only.
11th (28 Oct-03 Nov.)	UNIT-V Chemistry of Fuels & Lubricants	Definition of fuel, Classification of fuels, Characteristics of a good fuel, Calculation of HCV and LCV by using Dulong's formulas
12th (04 Nov.-13 Nov.)		Fuel rating (octane and cetane numbers), Chemical composition, Calorific value application and diagram of water gas, producer gas and biogas,
13th (05 Nov.-21 Nov.)		Definition of Lubricants, Function of good lubricant, Physical properties (Viscosity, viscosity index, flash and fire point) and
14th (23 Nov.-28 Nov.)		Chemical properties (TAN, Saponification value) of lubricants.
Signature of Subject Teacher		Signature of HOD

LESSON PLAN

Name of Faculty
Department
Semester
Subject
Lesson Plan for the
Week

Ankush Bharti
Applied Science & Humanities
1st
Applied Mechanics
July to Dec 2026

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P.L.

21/10/26

Theory

(1 Aug.- 7 Aug.)

Student Induction Program

Students arrival and hostel allotment, arrangements for stay in PG/rented accommodation, interaction with class in-charges, registration on WhatsApp groups/Google Classroom, interaction with the Principal, HODs and senior lecturers, orientation about the institute, departments, faculty and facilities, visits to respective departments, sports facilities, library, gymnasium and museum, interaction with Applied Sciences faculty, workshop visit, participation in the annual sports meet and athlete/cultural meet, Creative Arts and Universal Human Values lecture, interaction with a doctor on balanced diet and drug abuse, introduction to the credit system, class tests, house tests, attendance and internal sessional system, awareness about the Legal Aid Cell, Red Ribbon Club, scholarship schemes and board topper rewards, yoga session, information about the Beautification Club, Photography Club, institute newsletters and annual magazine, Innovation Club activities and interaction with local police.

1st
(10 Aug.-17 Aug.)

Basics of Mechanics and Force System

Introduction to mechanics, applied mechanics, statics and dynamics (kinetics and kinematics); utility of mechanics in engineering; rigid and flexible bodies; scalar and vector quantities.

2nd
(18 Aug.-25 Aug.)

Basics of Mechanics and Force System

Force—definition, SI unit, measurement, representation, effects and characteristics; free body and free body diagram; force systems and their classification; principle of transmissibility, law of superposition and resultant force.

3rd
(26 Aug.-01 Sept.)

Basics of Mechanics and Force System

Parallelogram law of forces with derivation; triangle law and polygon law of forces analytically; basic numerical problems.

4th
(02 Sept-09 Sept.)

Basics of Mechanics and Force System

Resolution of forces; resolution of a force into two components—orthogonal and non-orthogonal; basic numerical problems.

5th
(10 Sept-17 Sept.)

Moment

Concept of moment; moment of a force and its units; Varignon's theorem (definition only); equilibrium, equilibrant and general conditions of equilibrium.

Class Test

Class Test-I (30 % Syllabus)

6th
(18 Sept-24 Sept.)

Moment

Lami's theorem and its application; basic numerical problems based on equilibrium of coplanar concurrent forces.

7th
(25 Sept.-01 Oct.)

Moment

Resultant and its position in parallel force systems; like and unlike parallel forces under coplanar force systems; basic numerical problems.

8th
(03 Oct. 09 Oct.)

Friction

Friction and its relevance in engineering; types and laws of friction; limiting equilibrium, limiting friction and coefficient of friction.

9th
(12 Oct.-17 Oct.)

Friction

Angle of friction, angle of repose and their relationship; equilibrium of bodies on a level surface subjected to force parallel or inclined to the plane; basic numerical problems.

Class Test

Class Test-II (60% Syllabus)

10th
(19 Oct.-27 Oct.)

Friction

Equilibrium of bodies on an inclined plane subjected to force parallel to the plane; basic numerical problems and applications.

11th
(28 Oct-03 Nov.)

Centroid and Centre of Gravity

Definition of centroid, centre of gravity, axis of symmetry and reference axis; centroid of square, rectangle, triangle, circle and semicircle without derivation.

12th
(04 Nov.-13 Nov.)

Centroid and Centre of Gravity

Centroid of T, L and I-shaped laminae; centroid of composite plane figures with/without removed portion using moment method; centre of gravity of cube, cuboid, cone, cylinder, sphere and hemisphere without derivation.

House Test

House Test (80 % Syllabus)

13th
(14 Nov.-21 Nov.)

Simple Lifting Machine

Machine and simple machine; load, effort, velocity ratio, mechanical advantage and efficiency and their relationship; law of machines; ideal, reversible and self-locking machines.

14th
(23 Nov.-28 Nov.)

Simple Lifting Machine

Mechanical advantage, velocity ratio and efficiency of simple wheel and axle, simple screw jack, worm and worm wheel and single winch crab; basic numerical problems.

Signature of Subject Teacher

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3/11/08/26

LESSON PLAN		
Name of Faculty	Ankush Bharti	
Department	Applied Science & Humanities	
Semester	1 st	
Subject	Applied Physics-I	
Lesson Plan for the Duration	July to Dec 2026	
Week	Topic	Theory
(1 Aug.- 7 Aug.)	Student Induction Program	Students arrival and hostel allotment, arrangements for stay in PG/rented accommodation, interaction with class in-charges, registration on WhatsApp groups/Google Classroom, interaction with the Principal, HODs and senior lecturers, orientation about the institute, departments, faculty and facilities, visits to respective departments, sports facilities, library, gymnasium and museum, interaction with Applied Sciences faculty, workshop visit, participation in the annual sports meet and athlete/cultural meet, Creative Arts and Universal Human Values lecture, interaction with a doctor on balanced diet and drug abuse, introduction to the credit system, class tests, house tests, attendance and internal sessional system, awareness about the Legal Aid Cell, Red Ribbon Club, scholarship schemes and board topper rewards, yoga session, information about the Beautification Club, Photography Club, institute newsletters and annual magazine, Innovation Club activities and interaction with local police.
1 st (10 Aug.-17 Aug.)	Units and Dimensions	Physical quantities; fundamental and derived quantities; systems of units: CGS, FPS, MKS and SI.
2 nd (18 Aug.-25 Aug.)	Units and Dimensions	Dimensional formulae and SI units of displacement, area, volume, density, velocity and acceleration.
3 rd (26 Aug.-01 Sept.)	Units and Dimensions	Dimensional formulae and SI units of linear momentum, force, work, power, energy, pressure, stress and strain; principle of homogeneity of dimensions
4 th (02 Sept.-09 Sept.)	Units and Dimensions	Applications of dimensional analysis; checking correctness of the three equations of motion; errors and types of errors—instrumental, systematic, random and gross errors
5 th (10 Sept.-17 Sept.)	Force and Motion	Scalar and vector quantities—definitions and examples; representation of vectors; types of vectors: equal, negative, unit, co-initial and coplanar vectors
	Class Test	Class Test-I (30 % Syllabus)
6 th (18 Sept.-24 Sept.)	Force and Motion	Linear momentum; law of conservation of linear momentum with derivation and applications.
7 th (25 Sept.-01 Oct.)	Force and Motion	Angular displacement, angular velocity and angular acceleration; relation between linear and angular velocity; torque.
8 th (03 Oct.- 09 Oct.)	Force and Motion	Angular momentum; law of conservation of angular momentum and its applications; moment of inertia and its physical significance.
9 th (12 Oct.-17 Oct.)	Work, Power and Energy	Work; zero, positive and negative work with examples; energy and its SI unit; transformation of energy; kinetic energy—definition, examples, formula and derivation.
	Class Test	Class Test-II (60% Syllabus)
10 th (19 Oct.-27 Oct.)	Work, Power and Energy	Potential energy—definition, examples, formula and derivation; conservation of mechanical energy for freely falling bodies; power and numerical problems.

11 th (28 Oct-03 Nov.)	Properties of Matter	Elasticity and plasticity; stress and strain; types of stress and strain; Hooke's law.
12 th (04 Nov.-13 Nov.)	Properties of Matter	Modulus of elasticity and its types; pressure; atmospheric pressure, gauge pressure and absolute pressure.
	House Test	House Test (80 % Syllabus)
13 th (14 Nov.-21 Nov.)	Heat and Temperature	Heat and temperature on the basis of kinetic theory; difference between heat and temperature; modes of heat transfer—conduction, convection and radiation with examples
14 th (23 Nov.-28 Nov.)	Heat and Temperature	Temperature scales and their relationship; conversion between different temperature scales; numerical problems based on temperature conversion
 Signature of Subject Teacher		 Signature of HOD

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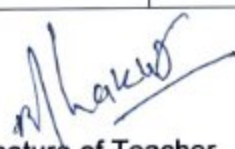
Department of Electrical Engineering

Lesson Plan

Name of Faculty	Er. B.S.Thakur
Discipline	Electrical Engineering
Semester	1st
Subject	Basic Electrical & Electronics Engineering (L-3 Hrs./Week)
Lesson Plan Duration	August – December 2026

Week	Topic	Theory
1 st (1Aug. – 08 Aug.)	Unit – I Electrical Fundamentals	Electrical quantities (Definitions & S.I. Units): Charge, Current, Voltage, E.M.F., Power, Energy
2 nd (9Aug. – 15 Aug.)	Unit – I Electrical Fundamentals	Electrical circuit elements: Resistor, inductor, capacitor. Ohms law, combination of resistances in series and parallel, Factors affecting resistance and concept of resistivity
3 rd (16Aug. – 22 Aug.)	Unit – I Electrical Fundamentals	Kirchhoff's Voltage Law (KVL) and Kirchhoff's Current Law (KCL), Voltage and current divider rules
4 th (23Aug. – 29 Aug.)	Unit – II Electromagnetism and Magnetic Circuits	Basic concepts of magnetism (Definitions & S.I. Units): magnetic flux,
5 th (30Aug. – 05 Sept.)	Unit – II Electromagnetism and Magnetic Circuits	flux density, magnetic field intensity, permeability, reluctance.
6 th (06 Sept. – 12 Sept.)	Unit – III Electromagnetism and Magnetic Circuits	Faraday's laws of electromagnetic induction and Lenz's law, Analogy between electric and magnetic circuits.
CLASS TEST -1		2 nd week of Sept. 2026
7 th (13 Sept. – 19 Sept.)	Unit– III Electrical Energy: Advantages & Applications	Difference between AC and DC supply, Various domestic, commercial, and industrial applications of electrical energy
8 th (20 Sept. – 26 Sept.)	Unit– III Electrical Energy: Advantages & Applications	Advantages of electrical energy over other forms of energy. Earthing (Definition), Equipment Earthing,
9 th (27 Sept. – 3 Oct.)	Unit– IV Electrical Energy: Advantages & Applications	purpose of Earthing. Batteries: Various types of batteries, their comparisons & applications, Grouping of cells in series and parallel.
10 th (04 Oct. – 10 Oct.)	Unit– IV Introduction to Semiconductors Technology	Introduction to semi-conducting materials, Doping, Intrinsic and extrinsic semiconductors. PN junction diode
CLASS TEST -2		2 nd week of Oct. 2026

11th (11 Oct. – 17 Oct.)	Unit– V Introduction to Semiconductors Technology	PN junction formation, depletion region, potential barrier, forward and reverse biasing, knee voltage ,
12th (18 Oct. – 24 Oct.)	Unit– V Introduction to Semiconductors Technology	reverse breakdown voltage, V-I characteristics & its applications. LEDs and Applications of LEDs
13th (25 Oct. – 31 Oct.)	Unit– V Basic of Digital Electronics	Number systems: Binary, Decimal, Hexadecimal & Octal. Base conversions of number systems (Binary to Decimal and vice versa),
House Test		1 Nov. – 7 Nov.
14th (8 Nov. – 14 Nov.)	Unit– VI Basic of Digital Electronics	Basic Laws & Theorems of Boolean algebra. Introduction to logic gates, their symbols and truth tables:
15th (15 Nov. – 21 Nov.)	Unit– VI Basic of Digital Electronics	AND, OR, NOT, NAND, NOR, Exclusive OR and Exclusive NOR gates. Universal logic gates.
16th (22 Nov. – 28 Nov.)	Revision & Doubt Clearance	Revision & Doubt Clearance


Signature of Teacher
(Er. B.S. Thakur)


Signature of HOD/OIC