

Lesson Plan (2025-26)

Name of Professor: Ms. Poonam Devi

Class: B.Sc.I Life Sciences - 1st Sem.

Subject: Minor Course (MIC)
(C24MIC133T)

Name of paper - Fundamental of Electronics- I

Lesson Plan: 21st July to 22nd Nov 2025

July 2025& August 2025	
	Topic Covered
Week 1(21 th July to 26th july)	Energy bands in solids: Charge particles,
Week 2 (28 th July to 2 nd Aug)	field intensity, potential,
Week 3 (04 Aug to 09Aug.)	energy and its unit, nature of atom, atomic energy levels,
Week 4 (11Aug to 16Aug)	Electronic structure of the elements,
Week 5 (18 th Aug to 23 rd Aug)	energy band theory of crystals
Week 6(25th Aug to 30 th Aug)	Insulators, semiconductors, and metals
September 2025	
Week 7(1 st Sep to 6th Sep)	Transport phenomena in semiconductors: mobility and conductivity
Week 8 (8 th Sep – 13th Sep)	Intrinsic and extrinsic semiconductors,
Week 9 (15th Sep-20 th Sep)	charge density in a semiconductor, Electrical properties of Ge and Si,
Week 10 (22 nd Sep-27th Sep)	Hall effect, Generation and recombination of charges, Diffusion, and continuity equation.
October 2025	
Week 11 (29th Sep-04 th Oct.)	p-n junction: open circuited p-n junction,
Week 12 (6 th Oct. -11 th Oct.)	current component of p-n diode, VI characteristics and its temperature dependence behavior,
Week 13 (13 th Oct – 18 th Oct)	p-n junction as rectifier, space charge and transition capacitance
Week 14 (27 th Oct – 31 th Oct)	diffusion capacitance, Breakdown diodes
November 2025	
Week 14(27 th Oct – 31 th Oct)	Zener diode and its characteristics.
Week 15 (3 rd Nov- 10th Nov)	Applications of diode; Diode as a rectifier, LED,
Week 16 (11 th Nov- 16 th Nov)	Solar cell, tunnel diodes.
Week 17 (18 th Nov-22 nd Nov)	Revision

Poonam Devi.
Assist. Prof. Physics


PRINCIPAL

Lesson Plan (2025-26)

Name of Professor: Ms. Poonam Devi

Class: B.Com - 1st Sem.

Subject: MDC

Name of paper - Fundamental of Physics-I

C24MDC123T

Lesson Plan: 21st July to 22nd Nov 2025

July 2025 & August 2025	
	Topic Covered
Week 1 (21 th July to 26 th July)	Fundamental of Physics: System of Measuring Units-Need for measurement,
Week 2 (28 th July to 2 nd Aug)	measuring process, concept of mass,
Week 3 (04 Aug to 09 Aug.)	length, time; Fundamental and derive units
Week 4 (11 Aug to 16 Aug)	system of units, concepts of error
Week 5 (18 th Aug to 23 rd Aug)	types of error (only definition), Accuracy and precision in measurement,
Week 6 (25 th Aug to 30 th Aug)	least count and applications of measuring instruments -Vernier caliper, Screw Gauge.
September 2025	
Week 7 (1 st Sep to 6 th Sep)	Scalar and Vector quantities
Week 8 (8 th Sep – 13 th Sep)	Laws of motion: Description of motion along a straight line- distance and displacement,
Week 9 (15 th Sep-20 th Sep)	uniform motion and nonuniform motion, average and instantaneous speed, average and instantaneous velocity, acceleration;
Week 10 (22 nd Sep-27 th Sep)	graphical analysis of straight-line motion- distance- time graph,
October 2025	
Week 11 (29 th Sep-04 th Oct.)	velocity-time graph, equation of motions and their applications
Week 12 (6 th Oct. -11 th Oct.)	Causes of motion- concept of force, Newton's 1 st law of motion, inertia, and mass;
Week 13 (13 th Oct – 18 th Oct)	Newton's 2 nd law of motion, momentum, and force;
Week 14 (27 th Oct – 31 th Oct)	3 rd law of motion, daily life applications of Newton's laws of motion. Universal law of gravitation and its importance,
November 2025	
Week 14 (27 th Oct – 31 th Oct)	Revision
Week 15 (3 rd Nov- 10 th Nov)	acceleration due to gravity and free fall of a body mass and weight of an object on earth and moon,
Week 16 (11 th Nov- 16 th Nov)	concept of thrust and pressure and importance in daily life.
Week 17 (18 th Nov-22 nd Nov)	Revision

Poonam Devi
Assist. Prof. Physics


PRINCIPAL

Lesson Plan (2025-26)

Name of Professor: Ms. Poonam Devi Class: B.Sc. III N.M.- 5th Sem.

Subject: Discipline Specific Course-II

Name of paper - CPL-502 Nuclear Physics

Lesson Plan: 14th July to 24th Nov 2025

July 2025 & August 2025	
	Topic Covered
Week 1 (21 st July to 26 th July)	Basic Properties of Nuclei: Nuclear composition (p-n and p-p hypotheses),
Week 2 (28 th July to 2 nd Aug)	Nuclear properties; Nuclear mass, size, spin, parity, magnetic dipole moment,
Week 3 (04 Aug to 09 Aug.)	quadrupole moment (shape concept) and binding energy,
Week 4 (11 Aug to 16 Aug)	nuclear binding energy curve. Radioactivity: Law of Radioactive Decay,
Week 5 (18 th Aug to 23 rd Aug)	Half-life, Radioactive Series, α -decay: Range of α -particles, Geiger-Nuttall law and α -particle Spectra,
Week 6 (25 th Aug to 30 th Aug)	β -decay, Energy Spectra and Neutrino Hypothesis, γ -decay : Origin of γ -rays.
September 2025	
Week 7 (1 st Sep to 6 th Sep)	Nuclear Models and Nuclear Forces: Similarity between nuclear matter and liquid drop, Liquid Drop Model,
Week 8 (8 th Sep – 13 th Sep)	Semi-classical Mass formula, Limitations of liquid drop model,
Week 9 (15 th Sep-20 th Sep)	Magic number, Experimental signature of shell structure in nuclei, Nuclear Shell Model (qualitative only) and its application, Meson Theory of
Week 10 (22 nd Sep-27 th Sep)	Radiation Interaction: Interaction of heavy charged particles (proton, Alpha particles etc.);
October 2025	
Week 11 (29 th Sep-04 th Oct.)	Energy loss of heavy charged particle (Discussion of Bethe formula), Range of alpha particles. Interaction of light charged particle (Beta particle),
Week 12 (6 th Oct. -11 th Oct.)	Interaction of Gamma Ray; Passage of Gamma radiations through matter (Photoelectric, Compton and pair production effect), Absorption of Gamma rays (Mass attenuation coefficient),
Week 13 (13 th Oct – 18 th Oct)	Nuclear Reactions: Types of nuclear reactions, Concept of reaction cross-section. Nuclear Radiation Detectors: Gas filled counters;
Week 14 (27 th Oct – 31 st Oct)	Ionization chamber, proportional counter, G.M. Counter (detailed study), Basic principle of scintillation counter and semiconductor detectors.
Week 14 (27 th Oct – 31 st Oct)	Revision
Week 15 (3 rd Nov- 10 th Nov)	Nuclear Reactors: General aspects of reactor design, Nuclear fission reactor (Principle, construction, working and use) Particle Accelerators:
Week 16 (11 th Nov- 16 th Nov)	Particle Accelerators: Particle Accelerator facilities in India, Linear Accelerator, Cyclotron, Synchrotron.
Week 17 (18 th Nov-22 nd Nov)	Revision

Poonam Devi
Asst. Prof. Physics


PRINCIPAL

Lesson Plan session 2025-2026 (odd Sem)

Name of Extension Lecturer : Dr. Monika

Class : B.Sc.-II (Physical Science) DSC

Subject: C24PHY301T: Thermodynamics and Statistical Physics

Month	Topics Covered
<u>August</u>	UNIT-I
Week 1	Thermodynamics-I: Thermodynamics systems, variables and equation of state
Week 2	Thermal equilibrium, Zeroth law of thermodynamics; Concept of heat, work and its sign(work done by the system on the system), First law of thermodynamics- its significance and limitations
Week 3	Different types of process-isochoric process, isobaric process, adiabatic process, isothermal process, cyclic process, Reversible and irreversible process
Week 4	First law and cyclic process; Second law of thermodynamics and its significance, Carnot theorem; Absolute scale of temperature,
Week 5	Absolute Zero, Joule's free expansion, Joule Thomson effect, Entropy, calculations of entropy of reversible and irreversible process, T-S diagram, entropy of a perfect gas, Nernst heat law (third law of thermodynamics).
<u>September</u>	Unit II
Week 1	Thermodynamics-II: Derivation of Clausius-Clapeyron and Clausius latent heat equations and their significance
Week 2	phase diagram and triple point of a substance,
Week 3	derivation of Maxwell thermodynamics relations from thermodynamics functions
Week 4	Application of Maxwell relations: relations between two specific heats of gas.
Week 5	Thermodynamics functions: Internal energy (U), Helmholtz function (F), Enthalpy (H), Gibbs function (G) and the relations between them
	TEST:UNIT I & UNIT II
<u>October</u>	UNIT-III
Week 1	Statistical Physics-I: Distribution of N (for N= 2, 3, 4) distinguishable and indistinguishable particles in two boxes of equal size microstates and microstate's
Week 2	thermodynamically probability, constraints and accessible states
Week 3	statistical fluctuations, general distribution of distinguishable particles in compartments of different size
Week 4	Semester Break
Week 5	postulates of statistical mechanics and discussion
<u>November</u>	UNIT-IV
Week 1	Introduction about classical, Bose and Fermi Dirac distribution
Week 2	Maxwell-Boltzmann statistics applied to an ideal gas in equilibrium-energy and speed distribution law, most probable speed, average and r.m.s. speed
Week 3	Need of Quantum statistics- classical versus quantum statistics,
Week 4	Bose-Einstein energy distribution Law, Fermi Dirac energy distribution Law.

Monika
(Monika Shrivastava)
Extension Lecturer

[Signature]
(Principal)

Physics Lesson Plan Session 2025-26(Odd Sem)

Name of Extension Lecturer : Dr. Monika

Class : B.A.& B.Com MDC II

Subject: C24MDC323T(Introductory Modern Physics)

	Class- BA and B.Com II
Month	Topics Covered (MDC) August
August	Unit I
Week 1	Introduction to electromagnetic spectra
Week 2	Electromagnetic radiations
Week 3	Electromagnetic radiations continued
Week 4	Infrared radiations (IR),
Week 5	radio waves, microwaves
September	
Week 1	Visible light, Ultraviolet (UV) light-Rays, Gamma rays, range
Week 2	Applications of electromagnetic Radiations
Week 3	Dispersion of light, Photoelectric effect
Week 4	Einstein's explanation Compton scattering, Pair production and annihilation. TEST Unit 1
October	Unit II
Week 1	Atomic structure: Rutherford scattering, Rutherford's model and its drawbacks,
Week 2	Bohr atomic model; quantization rule
Week 3	atomic stability, calculation of energy levels for hydrogen atom and their spectra.
Week 4	Semester Break
Week 5	Hydrogen atom spectra
November	
Week 1	Wave properties of matter: De-Broglie wavelength and matter wave wave packets
Week 2	Wave-particle duality
Week 3	phase velocity, group velocity and their relations.
Week 4	Revision

Monika
(Monika Dharwal)
Extension Lecturer


(Principal)

Physics Lesson Plan Session 2025-26(Odd Sem)

Name of Extension Lecturer : Dr. Monika
 Class : B.Sc.-II (Physical Science) SEC
 Subject: C24SEC330T (Numerical Techniques)

Month	Topics Covered
August	Unit-I
Week 1	Introduction to Fortran: Computer architecture and organization,
Week 2	memory and input/output devices, Binary and decimal arithmetic,
Week 3	Data types and integer constant, variables, Arithmetic expression, Assignment statement,
Week 4	Format statement, Read/write statement, Unformatted input/output statements, Algorithm
Week 5	Flowcharts, FORTRAN statement & subprograms: GOTO, Computed GOTO
September	
Week 1	Arithmetic If, logical If, If Then Else, Nested If Then Else,
Week 2	DO loops, Continue statement, nested do loop.
Week 3	Data statement, Double precision,
Week 4	Logical data, Complex data, While structure,
Week 5	Arrays and subscripted variables, Subprograms. , TEST: Unit 1
October	Unit-II
Week 1	Solutions of algebraic equations: Bisection method
Week 2	Iteration method, Newton-Raphson method,
Week 3	Muller's method, .
Week 4	Semeter Break
Week 5	Quotient-Difference method, Secant Method
November	
Week 1	Finding the roots of a quadratic equations, motion of a projectile , summing a series of numbers, finding factorial of given number
Week 2	motion in a central force field, addition and multiplication of two matrices,
Week 3	solution of algebraic equations using Bisection and Newton Raphson method.
Week 4	Revision

Monika

(Monika Shariwal)
 Extension Lecturer

[Signature]

(Principal)

Physics Lesson Plan 5th Semester (2025-26)

Class : B.Sc.III N.M. by Mr. Sushil Kumar

Month		Topics To Be Covered
Paper		CPL-501 Discipline Specific Course-I Elements of Modern Physics (Credits – 02, 30 Hrs (2 Hrs/week))
August	Week 1	UNIT-I Introduction to Quantisation: Properties of Thermal Radiation, Spectral Distribution of Blackbody Radiation,
	Week 2	Kirchhoff's Law, Stefan-Boltzmann Law and Wien's Distribution and Displacement law, Rayleigh-Jean's Law, Ultraviolet Catastrophe,
	Week 3	Unit- II Planck's Quantum Postulates, Planck's Law of Blackbody Radiation: Experimental Verification
	Week 4	Photo-electric effect and Compton scattering; Pair production and annihilation Bremsstrahlung effect
September	Week 5	, Cherenkov radiation, Production of X-rays. Bohr Model: Drawbacks of Rutherford model
	Week 6	, Bohr atomic model; Bohr's quantization rule and atomic stability;
	Week 7	Calculation of energy levels for hydrogen like atoms and their spectra, Effect of nuclear mass on spectra,
	Week 8	Correspondence principle. Fundamentals of Wave Mechanics: De Broglie wavelength and matter waves;
	Week 9	Wave-particle duality; Frank-Hertz, Davison and Germer experiment, phase velocity, group velocity and their relations.
October	Week 10	UNIT-III Heisenberg Uncertainty Principle; Estimating minimum energy of a confined particle using uncertainty principle;
	Week 11	Energy-time uncertainty principle, Properties of wave-function, Physical Interpretation of wave-function.
	Week 12	Schrodinger Equation: Momentum and Energy operators, Stationary states,
	Week 13	Diwali holidays
	Week 14	Physical interpretation of a wave function, probabilities and normalization, Schrodinger Equation, Particle in 1-dimension infinite potential well.
November	Week 15	Unit – IV LASER: Absorption and emission of radiation (qualitative only);
	Week 16	Basic features of LASER, threshold condition for laser emission; Population inversion; Resonance cavity; laser pumping;
	Week 17	Einstein's Co-efficient, 3 level and 4 level system, Basic principle and working of He-Ne LASER and Ruby LASER, Applications of LASER.
		Revision & Tests.

Note:- It is hereby certify that earlier this class (B.Sc.III N.M.) was being taught by Ms. Poonam during the month July 2025. But now it has been allotted to me from 1st August 2025 onwards.




Physics Lesson Plan 1st Semester (2025-26)

Class : B.A. I MDC by Mr. Sushil Kumar

Month		Topics To Be Covered
Paper		C24MDC123T Fundamental of Physics-I
August	Week 1	UNIT-I Fundamental of Physics: System of Measuring Units-
	Week 2	Need for measurement, measuring process,
	Week 3	concept of mass, length, time;
	Week 4	Fundamental and derive units
September	Week 5	system of units, concepts of error, types of error (only definition),
	Week 6	Accuracy and precision in measurement,
	Week 7	least count and applications of measuring instruments -Vernier caliper,
	Week 8	Screw Gauge. Scalar and Vector quantities
	Week 9	Unit- II Laws of motion: Description of motion along a straight line- distance and displacement,
October	Week 10	uniform motion and nonuniform motion, average and instantaneous speed, average and instantaneous velocity,
	Week 11	acceleration; graphical analysis of straight-line motion- distance-time graph,
	Week 12	velocity-time graph, equation of motions and their applications
	Week 13	Diwali Holidays
	Week 14	Causes of motion- concept of force, Newton's 1st law of motion, inertia, and mass. Newton's 2nd law of motion, momentum, and force;
November	Week 15	3rd law of motion, daily life applications of Newton's laws of motion Universal law of gravitation and its importance,
	Week 16	acceleration due to gravity and free fall of a body mass and weight of an object on earth and moon
	Week 17	concept of thrust and pressure and importance in daily life.
		Revision & tests




Physics Lesson Plan Session 2025-26(Odd Sem)

Name of Extension Lecturer : Sushil Kumar

Class : B.A. MDC II

Subject: C24MDC323T

: Introductory Modern Physics

Month		Topics Covered
AUGUST	Week 1	Unit-I Introduction to electromagnetic spectra: -Electromagnetic radiations, radio waves,
	Week 2	microwaves, Infrared radiations (IR), Visible light,
	Week 3	Ultraviolet (UV) light-Rays, Gamma rays, range
	Week 4	Applications of electromagnetic Radiations. Dispersion of light.
SEPTEMBER	Week 5	Photoelectric effect,
	Week 6	Einstein's explanation Compton scattering (Only Qualitative),
	Week 7	Pair production and annihilation. TEST:
	Week 8	Unit-II Atomic structure: Rutherford scattering,
	Week 9	Rutherford's model and its drawbacks,
OCTOBER	Week 10	Bohr atomic model; quantization rule,
	Week 11	atomic stability,
	Week 12	calculation of energy levels for hydrogen atom and their spectra.
	Week 13	Diwali Holidays
	Week 14	Wave properties of matter: De-Broglie wavelength and matter waves;
NOVEMBER	Week 15	wave packets, Wave-particle duality,
	Week 16	phase velocity
	Week 17	, group velocity and their relations.
		Revision & Test

Lesson Plan session 2025-2026

Name of Extension Lecturer : Dr. Kavita

Class : B.Sc I Physical Science DSC

Subject: C24PHY101T/C24MIN133T

Mechanics (Semester I)

Paper: Physics A

Month	Topics Covered
<u>August</u>	UNIT-I
Week 1	Fundamentals of Dynamics: Rigid body, Moment of Inertia, Radius of Gyration, Theorems of perpendicular and parallel axis (with proof),
Week 2	Moment of Inertia of ring, Disc, Angular Disc, Solid cylinder, Solid sphere
Week 3	Hollow sphere, Torque, Rotational Kinetic Energy, Angular momentum, Law of conservation of angular momentum,
Week 4	Rolling motion, condition for pure rolling, acceleration of body rolling down an inclined plane
Week 5	Fly wheel, Moment of Inertia of an irregular body.
<u>September</u>	Unit-II
Week 1	Elasticity: Deforming force, Elastic limit, stress, strain and their types, Hooke's law, Modulus of rigidity
Week 2	Relation between shear angle and angle of twist, elastic energy stored/volume in an elastic body
Week 3	Elongation produced in heavy rod due to its own weight and elastic potential energy stored in it, Tension in rotating rod
Week 4	Poisson's ratio and its limiting value, Elastic Constants, and their relations. Torque required for twisting cylinder, bending of beam, bending moment and its magnitude
Week 5	Determination of elastic constants for material of wire by Searle's method.
<u>October</u>	UNIT-III
Week 1	Gravitation and central force motion: Law of gravitation, Gravitational potential energy
Week 2	Inertial and gravitational mass, Potential and field due to spherical shell and solid sphere, Motion of a particle under a central force field,
Week 3	Two-body problem and its reduction to one-body problem and its solution, Differential Equation of motion with central force and its solution
Week 4	Diwali Holidays
Week 5	Concept of power Law Potentials, Kepler's Laws of Planetary motion.
<u>November</u>	UNIT-IV
Week 1	Special Theory of Relativity: Michelson's Morley experiment and its outcomes, Postulates of special theory of relativity, Lorentz Transformations, Simultaneity and order of events, Lorentz contraction,
Week 2	Time dilation, Relativistic transformation of velocity, relativistic addition of velocities, variation of mass-energy equivalence,
Week 3	Relativistic Doppler effect, relativistic kinematics, transformation of energy and momentum, transformation of force
Week 4	Revision

Kavita

Lesson Plan session 2025-2026

Name of Extension Lecturer : Dr. Kavita
Class : B.Sc I SEC
Subject: C24SEC130T
Instrumentation-I (Semester I)

Paper: Physics

Month	Topics Covered
August	UNIT-I
Week 1	Error in measurement
Week 2	Types of error, Ohm's law,
Week 3	Kirchhoff's current law, Kirchhoff's voltage law,
Week 4	Wheatstone bridge, Potentiometer, Measurement of emf of a cell using potentiometer,
Week 5	Multimeter: Principles of measurement of dc voltage and dc current
September	
Week 1	ac voltage, ac current and resistance.
Week 2	phase diagram and triple point of a substance,
Week 3	Specifications of a multimeter and their significance.
Week 4	Electronic Voltmeter: Advantage over conventional multimeter for voltage measurement with respect to input impedance and sensitivity.
Week 5	Principles of voltage measurement (block diagram only)
October	Unit-II
Week 1	Cathode Ray Oscilloscope: Block diagram of basic CRO.
Week 2	Construction of CRT, Electron gun,
Week 3	electrostatic focusing and acceleration (Explanation only– no mathematical treatment), brief discussion on screen phosphor,
Week 4	Diwali Holidays
Week 5	visual persistence & chemical composition. Time base operation, synchronization.
November	
Week 1	Front panel controls. Specifications of a CRO and their significance.
Week 2	Use of CRO for the measurement of voltage (dc and ac frequency, t
Week 3	time period. Special features of dual trace.
Week 4	Revision

Kavita

Lesson Plan session 2025-2026

Name of Extension Lecturer : Dr. Kavita

Class : B.Sc II Physical Science MIC

Subject: C24MIC333T (i)

Electronics Instrumentation

Paper: Physics

Month	Topics Covered
<u>August</u>	UNIT-I
Week 1	Basics of Measurement: Instruments accuracy, precision, sensitivity,
Week 2	resolution range etc., Errors in measurements and loading effects
Week 3	Multimeter: Principles of measurement of dc voltage and dc current,
Week 4	ac voltage, ac current and resistance,
Week 5	Specifications of multimeters and their significance.
<u>September</u>	Unit II
Week 1	Digital Multimeter: Block diagram and working of a digital multimeter, Working principle of time interval
Week 2	frequency and period measurements using universal counter/ frequency counter, Time - base stability,
Week 3	Accuracy and resolution. Electronic Voltmeter: Advantage over conventional multimeter for voltage measurement with respect to input impedance and sensitivity,
Week 4	Principles of voltage measurement (block diagram only)
Week 5	Specifications of an electronic Voltmeter/ Multimeter and their significance
<u>October</u>	UNIT-III
Week 1	Function Generators: Overview of function generators, their purpose, types of waveforms produced,
Week 2	and triggering methods, Generation of waveforms and important features like frequency range and modulation capabilities,
Week 3	working principle of generator, conversion of triangular to square and sine waves
Week 4	Semester Break
Week 5	Frequency response, Advance function generators.
<u>November</u>	UNIT-IV
Week 1	Cathode Ray Oscilloscope: Block diagram of basic CRO, Construction of CRT, Electron gun, electrostatic focusing and acceleration (qualitative treatment only),
Week 2	Brief discussion on screen phosphor, visual persistence & chemical composition, Time base operation, synchronization, Front panel controls, Specifications of a CRO and their significance
Week 3	Use of CRO for the measurement of voltage (dc and ac), frequency and time period. Special features of dual trace, Introduction to digital oscilloscope and probes
Week 4	Digital storage Oscilloscope: Block diagram and principle of working.

Kavita

