CLASS 12	2025 - 26	PHYSICS ANNUAL SYLLABUS
Month / **No. of Days**	**No.Of Periods**	**Name of the Chapter /Topic**
April		**Ch. 1 Electric charges and Electric Field**
		· Electric Charges;Conservation of charge,
22	12	· Coulomb's law
		· Forces between multiple charges;
		· Superposition principle and
		· Continuous charge distribution.
		· concept of Electric field,
		· electric field due to a point charge,
		· electric field lines,
		· electric dipole,
		· electric field due to a dipole,
		· torque on a dipole in uniform electric fleld.
		· Concept of Electric flux,
		· statement of Gauss's theorem and its applications to find field due to
		a. infinitely long straight wire,
		b. uniformly charged infinite plane sheet and
		c. uniformly charged thin spherical shell and Sphere
		(field inside and outside).
		Ch. 2 Electrostatic Potential and Capacitance
April /	11	Electric potential, Potential difference,electric potential due to
May-03		· a point charge,
		· a dipole and
		· system of charges;
		· equipotential surfaces,
		· electrical potential energy of a system of two point

		charges and of electric dipole in an electrostatic field.		
		· Conductors and insulators,		
		· Free charges and bound charges inside a conductor.		
		· Dielectrics and electric polarisation,		
		· capacitors and capacitance,		
		· combination of capacitors in series and in parallel,		
		· capacitance of a parallel plate capacitor with and		
		without dielectric medium between the plates		
		· Energy stored in a capacitor.		
June		**Ch. 3 Current Electricity**		
18	12	· Electric current,		
		· flow of electric charges in a		
		· metallic conductor,		
		· drift velocity, mobility and their relation		
		· with electric current;		
		· Ohm's law, electrical resistance,		
		· V-I characteristics		
		· (linear and nonlinear),		
		· Electrical energy and power,		
		· Electrical resistivity and conductivity.		
		· Carbon resistors, colour code		
		· Series and parallel combinations of resistors		
		· temperature dependence of resistance.		
		· Internal resistance of a cell,		
		· Potential difference and emf of a cell,		
		· Combination of cells in series and in parallel.		
		· Kirchhoff's Rules and it's applications.		
		· Wheatstone bridge, metre bridge.		
June	6	**Ch. 4 Moving Charges and Magnetism**		
July	5	· Concept of magnetic field,		
26		· Oersted's experiment.		

		· Biot - Savart law and its application to current carrying circular loop. · Ampere's law and its applications to infinitely long straight wire. · Straight solenoids and its magnetic field, · Force on a moving charge in uniform magnetic and electric fields. · Force on a current-carrying conductor in a uniform magnetic field. · Force between two parallel current-carrying conductors definition of ampere. · Torque experienced by a current loop in Uniform magnetic field; · moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.
July	8	**Ch. 5 Magnetism and Matter**
		· Current loop as a magnetic dipole and its magnetic dipole moment. · Magnetic dipole moment of a revolving electron. · Magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis. · Torque on a magnetic dipole (bar magnet) in a Uniform magnetic field; · Bar magnet as an equivalent solenoid,magnetic field lines; · Para-, dia- and ferro – magnetic substances, · Electromagnets and factors affecting their strengths. · Permanent magnets.
July	10	**Ch. 6 Electromagnetic Induction**
		· Electromagnetic induction; · Faraday's laws, · induced emf and current; · Lenz's Law, Eddy currents · Self and mutual induction.

		· A.C. generator		
		Ch.7 Alternating Current		
August		· Alternating currents,		
22	11	· Peak and rms value of alternating current/voltage;		
		· AC circuit of R,L,C,phasor, reactance and impedance;		
		· LCR series circuit, resonance; power in AC circuits		
		· wattless current.		
		· Transformer		
August	4	**Ch.8 Electromagnetic Waves**		
		· Displacement current, Maxwell's law		
		· Characteristics of EM waves		
		· Spectrum of sun light – gamma rays, X-rays,		
		UV, VL, IR, microwaves, Radiowaves.		
August (8)		**Ch. 9 Ray Optics**		
	16	· Reflection of light, spherical mirrors,		
September		· Mirror formula.		
23		· Refraction of light,		
		· Total internal reflection and its applications,		
		· Refraction at spherical surfaces, lenses,		
		· thin lens formula, lens maker's formula.		
		· Magnification, power of a lens,		
		· combination of thin lenses in contact,		
		· combination of a lens and a mirror.		
		· Optical instruments: Microscope and Telescope		
		· Magnification and types of telescopes		
September	12	**Ch. 10 Wave Optics**		
		· Wave front and its types.		
		· Huygen's principle.		

		· Proof of laws of reflection and refraction using Concept of wavefront.		
		· Coherent and incoherent sources of light.		
		· Interference, Young's double slit experiment and formulae for fringe width		
		· Diffraction due to a single slit, width of Central maximum.		
October	7	**Ch. 11 Dual Nature of Radiation and Matter**		
11		· Photoelectric effect,		
		· Hertz and Lenard's observations;		
		· Einstein's photoelectric equation-		
		· Particle nature of light.		
		· Matter waves wave - nature of particles,		
		· De Broglie relation.		
		· Davisson- Germer experiment		
October	8	**Ch.12 Atom**		
19		· Rutherford's Alpha-particle Scattering		
		· experiment; Rutherford's model of atom;		
		· Bohr model, Postulates, energy levels,		
		· Energy of electron in orbit, orbital radius		
		· Absorption and emission spectra, Spectral series		
		· Hydrogen spectrum.		
		· De Broglie hypotheses		
		· Bohr model's limitation		
November	10	**Ch.13 Nuclei**		
21		· Composition and size of nucleus,		
		· atomic masses, isotopes,isobars;isotones.		
		· Radioactivity -alpha,beta and gamma particles/rays and their properties (in brief)		

		· Mass-energy relation, mass defect;		
		· Binding energy per nucleon and its variation with mass number		
		· nuclear fission, nuclear fusion		
December		**Ch.14 Semiconductor Electronics material and devices**		
23	12	· Semiconductors ,conductors ,insulators		
		· Energy bands in conductors,semiconductors,insulators		
		· Intrinsic and extrinsic semiconductor		
		· P-type and n-type semiconductors, their characteristics		
		· P n junction diode – I-V characteristics in forward and reverse bias,		
		· Diode as a rectifier ;Half wave and Full wave rectifier		
DECEMBER	10	**REVISION**		