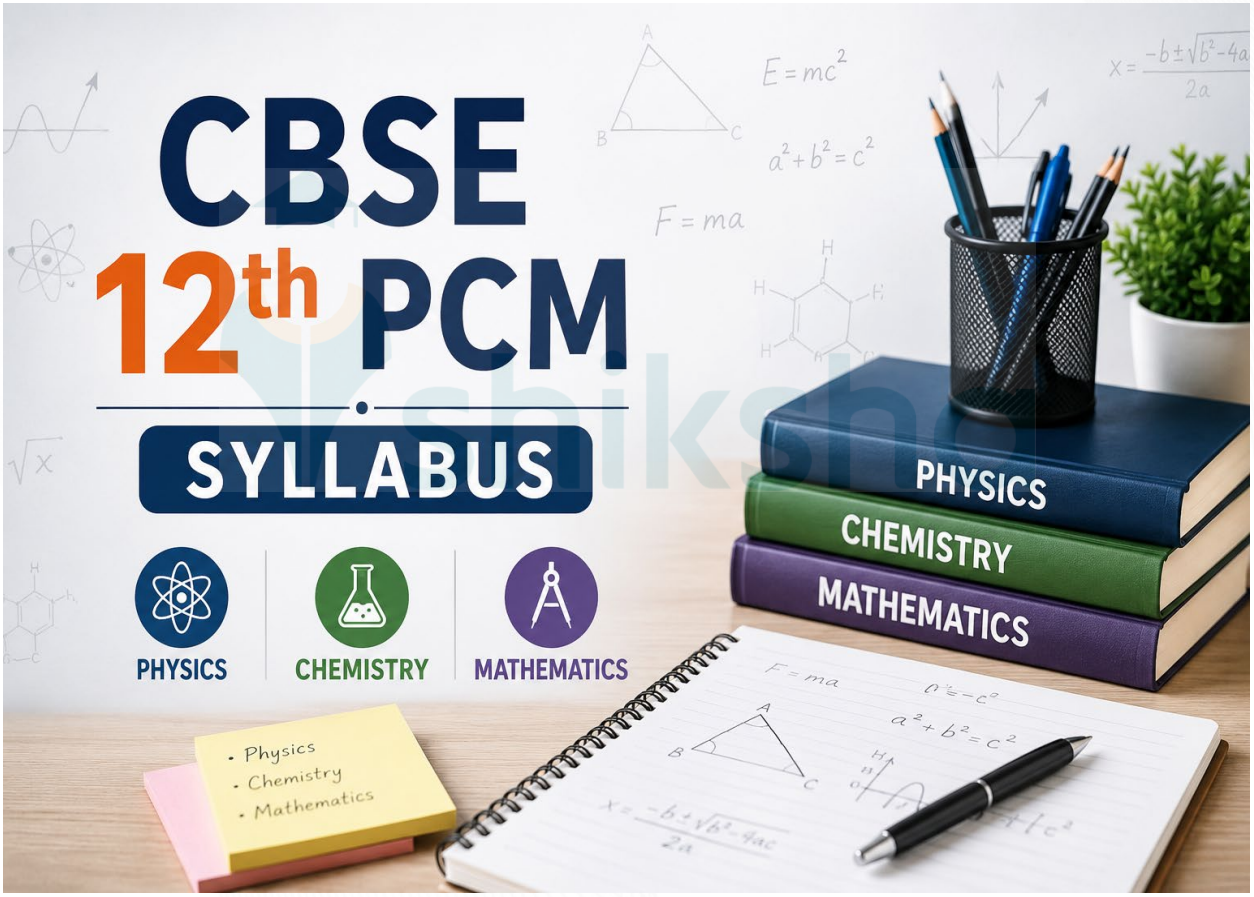
CBSE 12th Syllabus PDF

CBSE Class 12 Syllabus includes all the topics and chapters you need to study for your board exams. Understanding the syllabus is very important if you are preparing for the board exams. CBSE added four new skill subjects for Class 12 students. These are the Land Transportation Associate, Electronics and Hardware, Physical Activity Trainer, and Design Thinking and Innovation. Students need to pick one subject from these three: Informatics Practices, Computer Science, or Information Technology. For the exams, students will study some main subjects and some optional ones. The main subjects are Hindi (Core or Elective) and English (Core or Elective). The new syllabus also includes internal work like Health and Physical Education, Work Experience, and General Studies.



CBSE 12th PCM Syllabus

PCM syllabus covers subjects like Physics, Chemistry, and Mathematics as their main subjects in the science stream. Along with these, English is a compulsory subject for all students.

CBSE 12th Physics Syllabus

Unit	Chapter	Key Topics	Marks
Unit I: Electrostatics	Chapter 1: Electric Charges and Fields	Electric charges, conservation of charge, Coulomb's law (force between point charges), superposition principle, continuous charge distribution, electric field (due to point charge & dipole), electric dipole torque, electric flux, Gauss's theorem & applications (infinitely long straight wire, infinite plane sheet, thin spherical shell – inside & outside field).	16
	Chapter 2: Electrostatic Potential and Capacitance	Electric potential & potential difference, potential due to point charge, dipole & system of charges, equipotential surfaces, potential energy (two point charges & dipole), conductors & insulators, dielectrics, electric polarization, capacitors (series & parallel), parallel plate capacitor with/without dielectric, energy stored in capacitor.	
Unit II: Current Electricity	Chapter 3: Current Electricity	Electric current, drift velocity, mobility, Ohm's law, V-I characteristics (linear & non-linear), electrical energy & power, resistivity & conductivity, temperature dependence, internal resistance of cell, potential difference & EMF, combination of cells (series & parallel), Kirchhoff's rules, Wheatstone bridge.	
Unit III: Magnetic Effects of Current and Magnetism	Chapter 4: Moving Charges and Magnetism	Magnetic field concept, Oersted's experiment, Biot–Savart law (application to circular loop), Ampere's law (applications to straight wire, solenoid), force on moving charge, force on current-carrying conductor, force between two parallel conductors (ampere definition), torque on current loop, current loop as magnetic dipole, moving coil galvanometer (conversion to ammeter/voltmeter).	17
	Chapter 5: Magnetism and Matter	Bar magnet as equivalent solenoid, magnetic field due to bar magnet (axis & equator – qualitative), torque on magnetic dipole, magnetic field lines, magnetic materials (para, dia, ferro), magnetization, effect of temperature on magnetic properties.	
Unit IV: Electromagnetic Induction and Alternating Currents	Chapter 6: Electromagnetic Induction	Faraday's laws, induced EMF, Lenz's law, self & mutual induction.	
	Chapter 7: Alternating Current	AC basics, peak & RMS values, reactance & impedance, LCR series circuit (phasors only), resonance, AC power, power factor, wattless current, AC generator, transformer.	

Unit V: Electromagnetic Waves	Chapter 8: Electromagnetic Waves	Displacement current, properties of EM waves, transverse nature (qualitative), electromagnetic spectrum (radio to gamma rays) & uses.	18
Unit VI: Optics	Chapter 9: Ray Optics and Optical Instruments	Reflection, spherical mirrors, mirror formula, refraction, total internal reflection, optical fibers, refraction at spherical surfaces, lenses (thin lens formula, lens maker's formula, magnification, power, combination), prism refraction, microscopes & telescopes (magnifying power).	
	Chapter 10: Wave Optics	Wavefront & Huygen's principle, reflection & refraction using wavefronts, interference (Young's double slit, fringe width formula), coherent sources, diffraction at a single slit (qualitative).	
Unit VII: Dual Nature of Radiation and Matter	Chapter 11: Dual Nature of Radiation and Matter	Dual nature of light, photoelectric effect (Hertz & Lenard's observations), Einstein's equation, experimental study of photoelectric effect, de Broglie relation, matter waves.	12
Unit VIII: Atoms and Nuclei	Chapter 12: Atoms	Alpha particle scattering, Rutherford's model, Bohr's model (radius, velocity, energy of nth orbit), hydrogen spectrum (qualitative).	
	Chapter 13: Nuclei	Nucleus composition & size, nuclear force, mass-energy relation, mass defect, binding energy, variation of binding energy per nucleon, nuclear fission & fusion.	
Unit IX: Electronic Devices	Chapter 14: Semiconductor Electronics	Energy bands (conductors, semiconductors, insulators – qualitative), intrinsic & extrinsic semiconductors (p & n type), p–n junction diode (I-V characteristics), diode as rectifier.	7

CBSE 12th Chemistry Syllabus

Units	Key Topics	Marks
Unit 1: Solutions	Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative properties -relative lowering of vapor pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor	7
Unit 2: Electrochemistry	Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, va	9

	riations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell- electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion.	
Unit 3: Chemical Kinetics	Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; orderand molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order, reactions), concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation	7
Unit 4: d and f Block Elements	General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals –metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of $K_2Cr_2O_7$and $KMnO_4$.Lanthanides - Electronic configuration, oxidation states, chemical reactivity and lanthanide contraction and its consequences.Actinides -Electronic configuration, oxidation states and comparison with lanthanides	7
Unit 5: Coordination Compounds	Coordination compounds -Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).	7
Unit 6: Haloalkanes and Haloarenes	Haloalkanes: Nomenclature, nature of C–X bond, physical and chemical properties, optical rotation mechanism of substitution reactions.Haloarenes: Nature of C–X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only).Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT	6
Unit 7: Alcohols, Phenols and Ethers	Alcohols: Nomenclature, methods of preparation, physical and chemical properties(of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol.Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses	6
Unit 8: Aldehydes, Ketones and Carboxylic Acids	Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses. Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.	8

Unit 9: Amines	Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.	6
Unit 10: Biomolecules	Carbohydrates -Classification (aldoses and ketoses), monosaccahrides(glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates.Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structureof proteins-primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure.Vitamins -Classification and functions.Nucleic Acids: DNA and RNA	7

CBSE 12th Maths Syllabus

Unit	Chapter	Key Topics	Marks
Unit I: Relations and Functions	Chapter 1: Relations and Functions	Types of relations – reflexive, symmetric, transitive, equivalence; one-to-one and onto functions.	08
	Chapter 2: Inverse Trigonometric Functions	Definition, domain, range, principal values, graphs of inverse trigonometric functions.	
Unit II: Algebra	Chapter 3: Matrices	Types of matrices, operations (addition, multiplication, scalar multiplication), properties, transpose, inverse of a matrix.	10
	Chapter 4: Determinants	Determinant of up to 3×3 matrix, minors, cofactors, adjoint, inverse, area of triangle, solving linear equations using inverse of a matrix.	
Unit III: Calculus	Chapter 5: Continuity and Differentiability	Continuity, differentiability, chain rule, derivatives of inverse trigonometric, exponential, and logarithmic functions, second-order derivatives.	35
	Chapter 6: Applications of Derivatives	Rate of change, increasing/decreasing functions, maxima and minima (first and second derivative test).	
	Chapter 7: Integrals	Integration as the reverse of differentiation, methods (substitution, partial fractions, by parts), properties of definite integrals.	
	Chapter 8: Application of the Integrals	Area under curves – lines, circles, parabolas, ellipses (standard form).	
	Chapter 9: Differential Equations	Order, degree, general and particular solutions, solving by separation of variables and homogeneous equations.	

Unit IV: Vectors and Three-dimensional Geometry	Chapter 10: Vectors	Magnitude and direction, types of vectors, scalar (dot) and vector (cross) product, and applications.	14
	Chapter 11: Three-dimensional Geometry	Direction cosines/ratios, equations of lines, shortest distance, angle between two lines.	
Unit V: Linear Programming	Chapter 12: Linear Programming Problem	Constraints, objective function, graphical method, feasible/infeasible regions, optimal solutions.	05
Unit VI: Probability	Chapter 13: Probability	Conditional probability, multiplication theorem, independent events, Bayes' theorem, total probability.	08

CBSE 12th Syllabus PDF for All Subjects

CBSE 12th syllabus PDFs for all subjects are provided below. Students preparing for board exams can download syllabus to know important topics, chapter-wise weightage, and marks distribution. Whether you are from Science, Arts and Commerce streams, knowing syllabus helps students to prepare in an effective way. For your easy access, we have provided the CBSE Class 12 Syllabus 2026 for All Subjects PDFs below.

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