

# Syllabus

## JEE (Main)

### PHYSICS

- Basic Mathematics used in Physics, Vectors, Units, Dimensions and Measurement, Electrostatics
- Kinematics (Motion along a straight line and Motion in a plane), Current electricity
- Laws of Motion and Friction, Capacitors
- Work, Energy & Power, Circular Motion, Magnetic effect of current and Magnetism
- Conservation Laws-Collisions and Centre of Mass, Electromagnetic Induction (EMI)
- Rotational Motion, Alternating current
- Thermal Physics (Thermal Expansion, Calorimetry, Heat Transfer, KTG & Thermodynamics), Ray optics and optical Instruments
- Properties of matter and Fluid Mechanics, Gravitation, Wave optics (Nature of Light, Interference, Diffraction & Polarisation), EM Waves
- Oscillations (SHM, damped and forced oscillations & Resonance), Modern Physics
- Wave Motion and Doppler's Effect, Electronics and Communication systems

### CHEMISTRY

- Mole Concept, Atomic structure, Organic nomenclature, Basic principles of practical organic chemistry.
- Periodic properties, Basic inorganic nomenclature, Chemical thermodynamics & Thermochemistry
- GOC (complete)
- Chemical Bonding, Solid state, Chemical kinetics
- Isomerism, Chemical Equilibrium, State of matter (gaseous state), Redox & equivalent concept
- Ionic Equilibrium, Acid Base theory, Nuclear chemistry, Reaction intermediate.
- Co-ordination compound, s-block elements & hydrogen, Boron & Carbon family.
- Haloalkane, Aryl Halide (Substitution & Elimination), Electrochemistry & Solution, Ores & Metallurgy.
- Alkane, Alkenes & Alkynes, Aromatic hydrocarbon, Organic compounds containing oxygen & nitrogen, Qualitative analysis.
- Biomolecules (Carbohydrates, Amino Acid, Proteins), Polymer, Practical organic chemistry (Identification of elements & functional groups), Chemistry in everyday life, Environmental chemistry, Surface chemistry, d & f block element, p-block (nitrogen, oxygen, fluorine & noble gas) family.

### MATHEMATICS

- Trigonometric Ratios and Identities, Matrices & Determinants
- Quadratic Equations & Linear Inequalities, Functions and Inverse Trigonometric Function
- Trigonometric Equations, Height & Distance, Differential, Calculus (Limit, Continuity, Differentiability, Differentiation)
- Point and Straight Line, Indefinite integration
- Circle, Definite integration
- Sequences and Series, Application of Derivatives (Maxima & Minima, Monotonicity, Tangent & Normal)
- Permutation & Combination and Binomial Theorem, Vectors
- Complex Numbers, Principle of Mathematical Induction, Three Dimensional geometry,
- Parabola, Ellipse & Hyperbola, Area under the curve and Differential Equations
- [Sets, Relation, Statistics, Mathematical Reasoning], Probability