CLASS 11 PHYSICS — LO's Aligned Monthly Split-up Syllabus (April 2026–March 2027) + Portion Boundaries + Exams + Weightage + Question Paper Design + Blueprint
(For CM SoE & Non-CM SoE)
Developed by:- Jharkhand Council Of Educational Research & Training (Curriculum Division)

Month	Teaching Days (Available)	NCERT Chapter Titles	Sub-topics / Portion Boundary	LOs (*LO Mapping - IDs) (NCERT Higher Secondary Stage LO - Draft)	Practicals / Activities (Minimum)	Assessment / Exams (प्रश्न पत्र एवं उत्तर कुंजिका निर्माण)
Apr2026 + May 2026 + Jun 2026		Part I: Chapter 1 UNITS AND MEASUREMENTS; Chapter 2 MOTION IN A STRAIGHT LINE; Chapter 3 MOTION IN A PLANE (Start)	Ch-1: introduction; SI units; significant figures; dimensions; dimensional analysis; errors & uncertainty. Ch-2: position, displacement; velocity & speed; acceleration; kinematic equations; graphs (x–t, v–t). Ch-3 (Start): scalars & vectors; vector addition/subtraction; resolution of vectors; motion in a plane (basic).	LO-PHY-01, LO-PHY-02, LO-PHY-03, LO-PHY-05, LO-PHY-06, LO-PHY-07, LO-PHY-08, LO-PHY-09, LO-PHY-16	Lab/Activity: measurement using vernier calipers & screw gauge; significant figures practice; dimensional analysis worksheet. Activity: plot x–t and v–t graphs from simple motion data (manual/ICT).	April to June portion tested in Project RAIL on 06-07-2026 DIET Godda एवं DIET Gumla
Jul 2026	14	Part I: Chapter 3 MOTION IN A PLANE (Finish); Chapter 4 LAWS OF MOTION (Start)	Ch-3: motion in a plane with constant acceleration; projectile motion; uniform circular motion. Ch-4 (Start): Aristotle's fallacy; law of inertia; Newton's First & Second Laws; free-body diagrams (intro).	LO-PHY-01, LO-PHY-02, LO-PHY-04, LO-PHY-05, LO-PHY-06, LO-PHY-08, LO-PHY-11	Activity: projectile motion (simulation/graph); uniform circular motion examples. Lab/Activity: force and inertia demonstrations; free-body diagram practice worksheet.	July portion tested in Project RAIL on 03-08-2026 DIET Khunti एवं DIET Kodarma
Aug 2026	12	Part I: Chapter 4 LAWS OF MOTION (Finish); Chapter 5 WORK, ENERGY AND POWER (Start)	Ch-4: Newton's Third Law; conservation of momentum; equilibrium of a particle; common forces in mechanics; circular motion (basic). Ch-5 (Start): work & kinetic energy; work-energy theorem; power (intro).	LO-PHY-04, LO-PHY-05, LO-PHY-06, LO-PHY-08, LO-PHY-11, LO-PHY-16	Activity: action-reaction demonstrations; momentum conservation (balloon/rolling carts). Numericals drill: work-energy theorem (basic).	Half Yearly Exam: 07-09-2026 to 12-09-2026 (covers Jun–Aug).
Sep 2026	23	Part I: Chapter 5 WORK, ENERGY AND POWER (Finish); Chapter 6 SYSTEM OF PARTICLES AND ROTATIONAL MOTION (Start)	Ch-5: potential energy; conservation of mechanical energy; power; collisions (concept). Ch-6 (Start): centre of mass; motion of centre of mass; linear momentum of system; vector product; angular velocity; torque & angular momentum (intro).	LO-PHY-01, LO-PHY-04, LO-PHY-05, LO-PHY-06, LO-PHY-08, LO-PHY-10, LO-PHY-11	Lab/Activity: centre of mass of a lamina (simple method); torque demonstration using a spanner/lever. Numericals: collisions & energy conservation (basic).	September portion tested in Project RAIL on 06-10-2026 DIET Ramgarh एवं DIET Ranchi
Oct 2026	22	Part I: Chapter 6 SYSTEM OF PARTICLES AND ROTATIONAL MOTION (Finish); Chapter 7 GRAVITATION (Start); Part II: Chapter 8 MECHANICAL PROPERTIES OF SOLIDS (Start)	Ch-6: equilibrium of a rigid body; moment of inertia; kinematics & dynamics of rotational motion about a fixed axis; angular momentum in case of rotations about a fixed axis. Ch-7 (Start): Kepler's laws; universal law of gravitation; gravitational constant; acceleration due to gravity (intro). Ch-8 (Start): stress & strain; Hooke's law; stress-strain curve (intro).	LO-PHY-01, LO-PHY-04, LO-PHY-05, LO-PHY-06, LO-PHY-08, LO-PHY-11, LO-PHY-13, LO-PHY-14	Activity: moment of inertia (qualitative) using rotating objects. Lab/Activity: stress-strain (spring extension) + plot graph. ICT/Simulation: satellite orbit & g variation (conceptual).	October portion tested in Project RAIL on 02-11-2026 DIET Sahibganj एवं DIET Saraikela Kharsawan.
Nov 2026	14	Part I: Chapter 7 GRAVITATION (Finish); Part II: Chapter 8 MECHANICAL PROPERTIES OF SOLIDS (Finish); Chapter 9 MECHANICAL PROPERTIES OF FLUIDS (Start)	Ch-7: variation of g below/above Earth's surface; gravitational potential energy; escape speed; Earth satellites; energy of an orbiting satellite. Ch-8: elastic moduli; applications of elastic behaviour of materials. Ch-9 (Start): pressure; streamline flow; Bernoulli's principle (intro).	LO-PHY-01, LO-PHY-04, LO-PHY-06, LO-PHY-07, LO-PHY-08, LO-PHY-11, LO-PHY-13	Lab/Activity: Young's modulus (demonstration/experiment where available) or spring constant determination. Activity: Bernoulli effect demonstrations (paper strip/atomiser).	November portion tested in Project RAIL on 07-12-2026. DIET Bokaro एवं DIET Chatra
Dec 2026	21	Part II: Chapter 9 MECHANICAL PROPERTIES OF FLUIDS (Finish); Chapter 10 THERMAL PROPERTIES OF MATTER; Chapter 11 THERMODYNAMICS (Complete)	Ch-9: viscosity; surface tension; applications. Ch-10: temperature & heat; measurement of temperature; thermal expansion; specific heat capacity; calorimetry; change of state; heat transfer; Newton's law of cooling. Ch-11: thermal equilibrium; Zeroth law; heat, internal energy & work; First law; thermodynamic state variables; thermodynamic processes; Second law; reversible/irreversible processes; Carnot engine.	LO-PHY-01, LO-PHY-04, LO-PHY-05, LO-PHY-06, LO-PHY-07, LO-PHY-08, LO-PHY-11, LO-PHY-14, LO-PHY-15	Lab/Activity: surface tension/capillary rise (demonstration) and viscosity (qualitative). Calorimetry (specific heat/latent heat) demonstration; Newton's law of cooling (temperature-time graph).	December portion tested in Project RAIL on 11-01-2027 DIET Dumka एवं DIET E-Singhbhum
Jan 2027	18	Part II: Chapter 12 KINETIC THEORY; Chapter 13 OSCILLATIONS; Chapter 14 WAVES	Ch-12: molecular nature of matter; behaviour of gases; kinetic theory of an ideal gas; law of equipartition of energy; specific heat capacity; mean free path. Ch-13: periodic motion; SHM; SHM and uniform circular motion; velocity & acceleration in SHM; energy in SHM; simple pendulum. Ch-14: transverse & longitudinal waves; progressive wave relation; speed of a travelling wave; superposition; reflection; beats.	LO-PHY-01, LO-PHY-04, LO-PHY-05, LO-PHY-06, LO-PHY-07, LO-PHY-08, LO-PHY-09, LO-PHY-10, LO-PHY-11, LO-PHY-12	Lab/Activity: simple pendulum (T vs L) and SHM graphs; resonance tube/sonometer (where available); wave-on-string (demonstration) + beats (tuning forks).	Project RAIL (Full Syllabus) on 01-02-2027 DIET Godda एवं DIET Gumla

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Feb 2027 (Revision Month)	19	Full Revision: Chapters 1–14 (NCERT) + Numericals + Practical File + Investigatory Project	Syllabus consolidation: concept maps; CBSE-style numericals; graph-based & application-based questions; derivations (as applicable); lab record completion; sample papers & mock tests.	LO-PHY-01-LO-PHY-16	Revision practicals + viva practice; investigatory project completion; model/chart preparation; PYQ-based practice sessions.	Annual Examination: 01-03-2027 to 05-03-2027 AND 15-03-2027 to 20-03-2027 - full syllabus
Mar 2027	20	Board Examination (continued, if applicable) / Post-exam Academic Support	Board examination continuation / light post-exam academic engagement, bridge work, reading / enrichment / record completion as applicable.		Bridge activities / portfolio / reading enrichment / feedback.	Post-exam school support (as applicable)

LO ID	LOs (*LO Mapping - IDs) (NCERT Higher Secondary Stage LO - Draft)
LO-PHY-01	recognises the concepts of Physics related to various natural phenomena; such as, force, momentum, mechanical properties of solids and fluids, simple harmonic motion, greenhouse effect, variation in speed of sound in different media.
LO-PHY-02	differentiates between certain physical quantities; such as, between distance and displacement; speed and velocity; rectilinear and curvilinear motions; average, relative, and instantaneous velocity and speed; stress and strain; Young's modulus, shear modulus and bulk modulus.
LO-PHY-03	uses International system of units (SI Units), symbols, nomenclature of physical quantities and formulations, conventions; such as, common SI prefixes and symbols for multiples and sub-multiples; important constants; conversion factors; mathematical formulae; SI derived units (expressed in SI base units); SI derived units with special names; guidelines for using symbols for physical quantities, chemical elements and nuclides; guidelines for using symbols for SI units e.g newton, pascal, joule, watt, hertz, kelvin, dimensional formulae of physical quantities.
LO-PHY-04	explains processes, phenomena and laws with the understanding of the relationship between nature and matter on scientific basis; such as, need of accuracy, precision, errors and uncertainties in measurement; fundamental forces in nature – gravitational, electromagnetic, strong and weak nuclear forces; and unification of forces; various laws such as laws of motion, friction, lubrication, conservation laws, change in velocity due to acceleration, acceleration due to gravity of earth, why a seasoned cricketer draws in her/his hands during a catch; isothermal, isobaric, isochoric and adiabatic processes; formation of beats due to interference of sound waves.
LO-PHY-05	derives formulae and equations, such as, dimensional formulae and dimensional equation; kinematic equations for uniformly accelerated motion; equation of path of a projectile; equation of motion of an object in a plane with constant acceleration, potential energy of a spring, proof of work-energy theorem for a variable force, work done by a torque, efficiency of Carnot engine, different harmonics in stretched strings/pipes; Bernoulli's equation, Equation for pressure of an ideal gas, equations for velocity, acceleration, energy of a particle executing SHM.
LO-PHY-06	analyses and interprets data, graphs, and figures, and draws conclusion; such as, motion in a plane; analysis of the function of time to identify periodic and non-periodic motion; behavior of a material from its stress-strain curve; isothermal and adiabatic processes from P-V curves; variation of resonance peak with damping from the graph of amplitude versus angular frequency.
LO-PHY-07	handles tools and laboratory apparatus properly; measures physical quantities using appropriate apparatus, instruments, and devices; such as, scales, vernier calipers, screw gauge, spherometer, beam balance, stop clock/watch, inclined plane, sonometer, resonance tube, an arrangement for determining Young's modulus of the material of a wire.
LO-PHY-08	plans and conducts investigations and experiments to arrive at and verify the facts, principles, phenomena, relationship between physical quantities, or to seek answers to queries on their own; such as, study the effect of detergent on surface tension of water; determine terminal velocity of a spherical body; study the effect of changing the mass of bob or length of pendulum, on its time period; study the factors affecting the rate of loss of heat of a liquid; find the coefficient of friction between surface of a moving block and that of a horizontal surface.
LO-PHY-09	communicates the findings and conclusions in oral/written/ICT form that shows critical thinking, such of plotting a suitable graph between load and extension for finding force constant of a helical spring.
LO-PHY-10	exhibits creativity and out-of–the-box thinking in solving challenging physics problems; such as, minimum speed required by a motorcyclist at the uppermost position to perform a vertical loop in a death well in a circus; a pillar with distributed shape at the end support more load.
LO-PHY-11	applies concepts of physics in daily life with reasoning while decision- making and solving problems; such as, maximum possible speed of a car on a banked road; in which direction to hold the umbrella if rain is falling vertically and wind is blowing in certain direction; during blood transfusion the height at which the blood container be placed so that blood may just enter the vein through the needle inserted in vein; a spinning ball deviates from its parabolic trajectory; changing the tension in the wire of sitar for changing frequency of sound emitted by it.
LO-PHY-12	takes initiative to learn about the newer researches, discoveries and inventions in physics; such as, about space programme of India and other countries; research to increase the strength of a material, increase the efficiency of engines.
LO-PHY-13	recognises different processes used in Physics-related industrial and technological applications; such as, knowledge of strength of materials used for structural design of columns, beams and supports while designing a building; hydraulic machine for lifting heavy objects; knowledge about beats for tuning musical instruments.
LO-PHY-14	realises and appreciates the interface of Physics with other disciplines; such as, application of Doppler effect in medical science to study heart beats and blood flow in different parts of body; mechanism of conversion of heat into work for different heat engines; properties of materials in different branches of engineering.
LO-PHY-15	develops positive scientific attitude, and appreciates the role and impact of Physics and technology towards the improvement of quality of life and human welfare, such as, nuclear radiation techniques for diagnosis and treatment, nuclear power.

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LO-PHY-16	exhibits values of honesty, objectivity, respect for life, rational thinking, and freedom from myth and superstitious beliefs while taking decisions, etc.
LO-IX-17	exhibits values of honesty, objectivity, rational thinking, freedom from myths, superstitious beliefs while taking decisions, respect for life, etc., such as, records and reports experimental data exactly, myth that sexually transmitted diseases are spread by casual physical contact, belief that vaccination is not important for prevention of diseases, etc.
LO-IX-18	communicates the findings and conclusions effectively, such as, those derived from experiments, activities, and projects both in oral and written form using appropriate figures, tables, graphs, and digital forms, etc.
LO-IX-19	applies the interdependency and interrelationship in the biotic and abiotic factors of environment to promote conservation of environment, such as, organic farming, waste management, etc.

QUESTION PAPER DESIGN / BLUEPRINT

A. THEORY BLUEPRINT

S.No.	Unit / Section Block	Marks	Prescribed Scope / Paper Component
1	Units I–III	23	Physical World & Measurement, Kinematics, Laws of Motion
2	Units IV–VI	17	Work, Energy & Power; Motion of System of Particles and Rigid Body; Gravitation
3	Units VII–IX	20	Properties of Bulk Matter; Thermodynamics; Kinetic Theory
4	Unit X	10	Oscillations and Waves
	TOTAL	70	Theory Paper

B. TYPOLOGY OF QUESTIONS

S.No.	Category / Question Type	Marks	Weightage / Nature
1	Remembering & Understanding	27	38%
2	Applying	22	32%
3	Analysing / Evaluating / Creating	21	30%
	TOTAL	70	100%

C. INTERNAL / PRACTICAL / PROJECT

S.No.	Component	Marks	Remarks
1	Two experiments (one from each section)	14	7 + 7
2	Practical record (experiments & activities)	5	
3	One activity from any section	3	
4	Investigatory Project	3	
5	Viva voce	5	
	TOTAL	30	Practical