

GOVERNMENT COLLEGE BIROHAR (JHAJJAR) Physics

Summary of Lesson Plans of College Faculty for Academic Session 2025-26

Name of Assistant Professor:

Dr. Jai Prakash Sharma (DSC)

Class & Sem.:

B.Sc Ist Yr Sem Subject: Mechanics and Theory of Relativity

Months	Topics/Chapters to be covered
August 2025	Basics of Mechanics [24 Ph - 40 DSC] Mechanics of a single and no. of particles. Conservation Laws P, L and E (Energy) Constrained Motion, Work, Power, Energy Force as gradient of potential Energy. Work done by non-conservative forces. Practical Start and 2 Experiments. Unit Test - 1 Assignment - 1
September 2025	Generalized Notations. Deg. of freedom, Generalized Coordinates. Gen. Displacement, Velocity, acceleration, Momentum Force and Potential Hamilton's variational Principle. Lagrange's eq. Linear Harmonic Oscillator. Simple pendulum, Atwood's Machine. Unit Test , Practical.
October 2025	Rotational Dynamics? Rigid Body, moment of inertia, torque. Theorems - 1 and parallel (1-Perpendicular) find moment of inertia. Sphere, cylinder. Bar Rectangular cross-sections Acc. of a body falling down, Motion involving Unit Test Practical Assignment - 2.
November 2025	Special Theory of Relativity? Non-inertial frames, frame of Reference Centrifugal force, M.M. Experiments Theory of Relativity, Lorentz Transformation and its applications. Mass Energy Equivalence Transformation of Energy and Momentum Unit Test - 4. Experiments and Assignment.

Jai Prakash
Signature of Assistant Professor



GOVERNMENT COLLEGE BIROHAR (JHAJJAR)

Summary of Lesson Plans of College Faculty for Academic Session 2025-26

Name of Assistant Professor: Dr. Jai Parveen Sharma 24 Phy 401M101
 Class & Sem.: 1st Sem Subject: Physics Minor (Physics in Everyday Life)

Months	Topics/Chapters to be covered
August 2025	<u>Mechanics</u> Every day activities related to force, weight, work, Energy, Power and Centrifuge Washing machine Unit Test - I Practicals, Assignment
September 2025	<u>Heat</u> Variation of boiling point with pressure, pressure cooker, cooling by expansion, refrigerator, Air Conditioner, Bernoulli's principle, Bunsen burner, Aero plane. Unit Test - I Practicals Assignment
October 2025	<u>Sound and Optics</u> Sound waves, Doppler effect, power of lens, long sight and short sight, microscope, Telescope, binocular camera, video camera Unit Test - I Assignment Practicals
November 2025	<u>Electrical and Electronic Applications</u> Working of the tube light and fan, Kilowatt hour, fuse and heating elements, microwave oven, electric heater, Photo electric effect Unit Test Practicals

Jai Parveen
 Signature of Assistant Professor

GOVERNMENT COLLEGE BIROHAR (JHAJJAR)

Summary of Lesson Plans of College Faculty for Academic Session 2025-26

Name of Assistant Professor: Dr. Jai Parash Ramu (24 Phy 401 SEO)

Class & Sem.: 1st Sem Subject: Skill Physics (Electrical Circuit & Instrumentation Skill)

Months	Topics/Chapters to be covered
August 2025	<u>Basic Electricity Principles:-</u> Voltage, current, Resistance, Power, ohm's law Series and parallel, AC and DC familiarization with - Multimeter, Voltmeter and Ammeter, AC voltage and DC Voltage AC millivoltmeter, Amplifier, Rectifier Unit Test Assignment, Practicum
September 2025	<u>CRO:-</u> Construction of CRT, Electron gun, its Diagram Screen phosphor, visual persistence & chemical composition, Time base operation Front panel controls Digital Storage Oscilloscope, its Diagram and working Unit Test Practicals, Assignment
October 2025	<u>Digital Instruments (DI)</u> , its Principle, Comparison of DI and Analog, its characteristics working, Digital Voltmeter, Multimeter its working and Principle, time interval, frequency counter, time base, Delay, Stability, accuracy and resolution Unit Test, Assignment, Practical
November 2025	<u>Solid State Devices:-</u> Resistors, inductors, (LCR) Capacitors, Diode Rectifiers Generators and Transformer, DC Power source, impedance, Electric Motors Single phase, Three phase, DC Motors speed of dc and ac motor. Unit Test - Practical Assignment

Jai Ram

Signature of Assistant Professor



GOVERNMENT COLLEGE BIROHAR (JHAJJAR)

Summary of Lesson Plans of College Faculty for Academic Session 2025-26

Name of Assistant Professor: Dr. Jai Prakash Shukla, 24 Phy VO (M.D.)
 Class & Sem.: 1st Sem Subject: Physics MDC Physics Fundamental I

Months	Topics/Chapters to be covered
August 2025	Physics :- Nature, Scope, ^{major} Discoveries Major contribution by Indian Physicists Fundamental Constant, Measuring Unit Mass, Length, Time, Fundamental Unit and 'Derive' Unit, System of Unit error and its type Vernier calliper, Screw Gauge. Unit Test, Practical, Assignment
September 2025	<u>Motion</u> :- Motion of object in One D, 2D, 3D frame of reference, Scalar and Vector quantities Uniform Motion and Non-Uniform motion Distance, Displacement, Speed, velocity Acc. and its Graphs, eq. of motions Unit Test, Practical, Assignment
October 2025	<u>Force</u> :- Motion Law - 1. Law of motion, inertia and mass, Newton's Law Gravitation Law, concept of thrust and pressure and importance in daily life. buoyancy and Archimedes Principle Floating of objects in water. Unit Test, Practical
November 2025	Work, Power, Energy, type of Energy. K.E, P.E, M.E. Conservation Law of Energy and its Application Conservation Law of P and E, collision Centre of mass, Physics behind cycling rock climbing and Skating. Unit Test, Practical, Assignment

Jai Prakash
 Signature of Assistant Professor

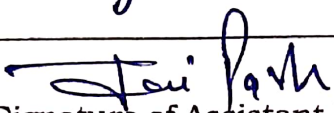


B.Sc 3rd year
GOVERNMENT COLLEGE BIROHAR (JHAJJAR)

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Name of Assistant Professor: Dr. Jai Prakash Sharma,
Class & Sem.: Vb Sem Subject: Physics (Quantum Mechanics)

Months	Topics/Chapters to be covered
August 2025	Introduction To Quantum Mechanics Failure of E.M. Theory, Quantum Theory Photon, Photo electric effect, Compton effect, De-Broglie hypothesis, Davisson & Germer G.P Thomson experiment. Heisenberg's uncertainty principle. Time Energy and angular Momentum
September 2025	Gamma Ray Microscope, Electron diff. from a slit. Unit Test - 1st Experiment Schrodinger wave Equation Derivation of Time dependent Schrodinger wave eq. and Time independent eigen value, eigen function, wave function Normalization of wave function
October 2025	Solution of Schrodinger eq. of harmonic Oscillator $\rightarrow$ ground state and excited state Unit Test - 2 Assignment No. 1. Application of Schrodinger wave eq. One Dimensional problem $\rightarrow$ free space in (One D. for) eigen value, eigen function. Quantization of Energy and Momentum, nodes, Antinodes Zero point Energy
November 2025	(i) One dimensional potential barrier $E > V_0$ Reflection and Transmission coefficient (ii) One dimensional pot. barrier $E < V_0$ Reflection coefficient, Penetration or leakage coefficient, penetration depth Unit Test No. 3 Assignment


Signature of Assistant Professor