Paper Code	NPHY-120	**Cr. Hrs.**	03
Paper Title	INTRODUCTION TO PHYSICS		
Domain	Natural Sciences		

Learning outcomes	Overview of physics, Scientific method, Units and measurements
Contents	**Kinematics:** Scalars and vectors, Motion in one dimension, Motion in two dimensions **Dynamics:** Newton's laws of motion, Applications of Newton's laws, Friction, tension, normal forces **Work and Energy:** Work and kinetic energy, Potential energy, Conservation of energy **Momentum:** Linear momentum and collisions, Impulse, Conservation of momentum **Rotational Motion:** Angular velocity and acceleration, Torque and rotational inertia, Conservation of angular momentum **Gravitation:** Newton's law of universal gravitation, Gravitational potential energy, Orbits of planets and satellites **Thermodynamics:** Temperature and heat, Laws of thermodynamics, Second law of thermodynamics and entropy **Waves and Sound:** Wave properties, Sound waves, Doppler effect **Electricity:** Electric charge and Coulomb's law, Electric field and electric potential, Capacitance and dielectrics, The concept of charge and field **Magnetism:** Magnetic fields and forces, Electromagnetic induction, Faraday's law of induction **Optics:** Reflection and refraction, Lenses and mirrors, Wave optics, The nature of light **Modern Physics:** Introduction to quantum mechanics, Atomic structure, Nuclear physics
Teaching-learning Strategies	Classroom teaching / Lecturing
Assignments- Types and Number	Problem sheet: 3-4
Assessment and Examinations	Mid-Term Assessment: 35% Formative Assessment: (25%): It includes classroom participation, attendance, assignments and presentations, homework, attitude and behavior, hands-on-activities, short tests, quizzes etc. Final Term Assessment: 40%
Text Books	1. Physics for Scientists and Engineers with Modern Physics by Raymond A. Serway and John W. Jewett, 2014Cengage Learning 2. Fundamentals of Physics by David Halliday, Robert Resnick, and Jearl Walker, 2011, John Wiley & Sons 3. College Physics by Hugh D. Young, 2012, Pearson 4. University Physics with Modern Physics by Hugh D. Young and Roger A. Freedman, 2019, Pearson

	5. Physics: Principles with Applications by Douglas C. Giancoli, 2018, Pearson