

Paper Code	NPHY-110	Cr. Hrs.	03
Paper Title	PHYSICS FOR EVERYDAY LIFE		
Domain	Natural Sciences		

Learning outcomes	Overview of physics, Scientific method, Units and measurements, Introduction to applications in technology and environment
Contents	<p>Mechanics in Daily Life: Motion and forces, Work, energy, and power, Simple machines (levers, pulleys, inclined planes), Vehicles, sports, and everyday tools</p> <p>Electricity and Magnetism in Technology: Electric charge and current, Voltage, resistance, and Ohm's law, Magnetic fields and forces, Household electronics, electric motors, and generators</p> <p>Light and Optics in Everyday Life: Nature of light, Reflection, refraction, and lenses, Optical instruments, Eyeglasses, cameras, and fiber optics</p> <p>Physics of Renewable Energy Sources: Solar energy: photovoltaic cells and solar heating, Wind energy: turbines and power generation, Hydroelectric energy: dams and water turbines, Geothermal energy: heat pumps and geothermal plants</p> <p>Physics in Environmental Science: Atmospheric physics: weather and climate, Pollution and its physical properties, Energy efficiency and conservation, Greenhouse effect and global warming, Climate models and predictions, Green houses and other sustainable methods</p> <p>Physics in Health and Medicine: Medical imaging: X-rays, MRI, and ultrasound, Radiation therapy, Biomechanics and prosthetics, Diagnostic tools and treatments</p> <p>Nanotechnology and Material Science: Nanostructures and properties, Material strength and properties, Electronics, coatings, and medicine</p> <p>Nuclear Physics and Its Applications: Basics of nuclear physics, structure of atom, Nuclear energy: fission and fusion, Nuclear power plants and medical uses</p> <p>Physics in Space Exploration: Gravity and orbits, Space travel and propulsion systems, Satellites, space telescopes, and missions</p>
Teaching-learning Strategies	Classroom teaching / Lecturing
Assignments- Types and Number	Problem sheet: 3-4
Assessment and Examinations	<p>Mid-Term Assessment: 35%</p> <p>Formative Assessment: (25%): It includes classroom participation, attendance, assignments and presentations, homework, attitude and behavior, hands-on-activities, short tests, quizzes etc.</p> <p>Final Term Assessment: 40%</p>
Text Books	<ol style="list-style-type: none"> 1. Conceptual Physical Science By <u>Paul G. Hewitt, John Suchocki, Leslie A. Hewitt</u> · 2012, Pearson 2. Energy, Environment, and Climate by Richard Wolfson, 2012, W.W. Norton 3. The Physics of Everyday Things: The Extraordinary Science Behind an Ordinary Day by James Kakalios, 2018 4. Applied Physics, By <u>Dale Ewen, Neill Schurter, P. Erik Gundersen</u> · 2005, Pearson 5. Sustainable Energy - Without the Hot Air by David J.C. MacKay, 2016, Bloomsbury