

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

<b>Learning outcomes</b>	Overview of physics, Scientific method, Units and measurements, Introduction to applications in technology and environment
<b>Contents</b>	<p><b>Mechanics in Daily Life:</b> Motion and forces, Work, energy, and power, Simple machines (levers, pulleys, inclined planes), Vehicles, sports, and everyday tools</p> <p><b>Electricity and Magnetism in Technology:</b> Electric charge and current, Voltage, resistance, and Ohm's law, Magnetic fields and forces, Household electronics, electric motors, and generators</p> <p><b>Light and Optics in Everyday Life:</b> Nature of light, Reflection, refraction, and lenses, Optical instruments, Eyeglasses, cameras, and fiber optics</p> <p><b>Physics of Renewable Energy Sources:</b> 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><b>Physics in Environmental Science:</b> 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><b>Physics in Health and Medicine:</b> Medical imaging: X-rays, MRI, and ultrasound, Radiation therapy, Biomechanics and prosthetics, Diagnostic tools and treatments</p> <p><b>Nanotechnology and Material Science:</b> Nanostructures and properties, Material strength and properties, Electronics, coatings, and medicine</p> <p><b>Nuclear Physics and Its Applications:</b> Basics of nuclear physics, structure of atom, Nuclear energy: fission and fusion, Nuclear power plants and medical uses</p> <p><b>Physics in Space Exploration:</b> Gravity and orbits, Space travel and propulsion systems, Satellites, space telescopes, and missions</p>
<b>Teaching-learning Strategies</b>	Classroom teaching / Lecturing
<b>Assignments- Types and Number</b>	Problem sheet: 3-4
<b>Assessment and Examinations</b>	<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>
<b>Text Books</b>	<ol style="list-style-type: none"> <li>1. Conceptual Physical Science By <u>Paul G. Hewitt</u>, <u>John Suchocki</u>, <u>Leslie A. Hewitt</u> · 2012, Pearson</li> <li>2. Energy, Environment, and Climate by Richard Wolfson, 2012, W.W. Norton</li> <li>3. The Physics of Everyday Things: The Extraordinary Science Behind an Ordinary Day by James Kakalios, 2018</li> <li>4. Applied Physics, By <u>Dale Ewen</u>, <u>Neill Schurter</u>, <u>P. Erik Gundersen</u> · 2005, Pearson</li> <li>5. Sustainable Energy - Without the Hot Air by David J.C. MacKay, 2016, Bloomsbury</li> </ol>

