

<b>Course Title</b>	<b>Physics Lab-IV</b>
<b>Course Code</b>	<b>MPHY-364</b>
<b>Credit Hours</b>	<b>CH 1</b>
<b>Pre- requisites</b>	<b>MPHY-231</b>
<b>Learning outcomes</b>	To train students in performing experiments related to nuclear and solid-state physics
<b>Contents</b>	<p><b>Nuclear Physics:</b> To determine the characteristic of G. M. tube, To measure the range and maximum energy of <math>\beta</math> particles, Measurement of half-life of a radioactive source, Characteristics of G.M. counter, study of fluctuations in random process, Energy dependence of the gamma absorption coefficient / Gamma spectroscopy</p> <p><b>Solid state physics:</b> To Hall effect in n- and p-germanium, Hall effect in n- and p-germanium (Tesla-meter), Band gap of germanium, study some aspects of Ferromagnetism by drawing B. H. curve.</p> <p><i>*Note: Any eight experiments must be performed subject to the availability of apparatus.</i></p>
<b>Teaching-learning Strategies</b>	Classroom teaching / Lecturing, practical
<b>Assignments-Types and Number</b>	<p>Problem sheet: 3-4</p> <p>Experimental write-up, data analysis and data plotting, observations and calculations etc.,</p>
<b>Text Books</b>	<ol style="list-style-type: none"> <li>1. Physics laboratory experiments by Jerry D. Wilson, Cengage Learning (2014)</li> <li>2. General Physics Laboratory I Experiments by Kapila Clara Castoldi, Kendall Hunt, (2015)</li> <li>3. Physics Lab Experiments by Matthew French, Mercury Learning &amp; Information, (2016)</li> <li>4. Experiments And Demonstrations In Physics: Bar-ilan Physics Laboratory by Kraftmakher Yaakov, World Scientific (2014)</li> </ol>