

Course Title	PHYSICS LAB-IV
Course Code	MPHY-364
Credit Hours	CH 1
Pre- requisites	MPHY-231
Learning outcomes	To train students in performing experiments related to nuclear and solid-state physics
Contents	Nuclear Physics: To determine the characteristic of G. M. tube, To measure the range and maximum energy of β 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 Solid state physics: 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. <i>*Note: Any eight experiments must be performed subject to the availability of apparatus.</i>
Teaching-learning Strategies	Classroom teaching / Lecturing, practical
Assignments- Types and Number	Problem sheet: 3-4 Experimental write-up, data analysis and data plotting, observations and calculations etc.,
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 laboratory experiments by Jerry D. Wilson, Cengage Learning (2014) 2. General Physics Laboratory I Experiments by Kapila Clara Castoldi, Kendall Hunt, (2015) 3. Physics Lab Experiments by Matthew French, Mercury Learning & Information, (2016) 4. Experiments And Demonstrations In Physics: Bar-ilan Physics Laboratory by Kraftmakher Yaakov, World Scientific (2014)