

**Subject Code: 02PY0407**
**Subject Name: Laboratory Practicals 2**
**M.Sc. Year-I, Sem-I**
**Objective:** To introspect the fundamental experiments of Physics.

**Credits Earned:** 2 Credits

**Course Outcomes:** After completion of this course, post graduate will be able to

- Gain the hands-on experience in performing experiments in semiconductor devices and atomic-molecular physics.

**Teaching and Examination Scheme**

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE	IA	CSE	Viva (V)	Term work (TW)	
0	0	4	2	0	0	0	25	25	50

**Suggested List of Experiments:**

1. To determine the energy band gap of semiconductor by four probe method
2. To study the applications of logic gates as adders and subtractors
3. To determine the ratio of  $e/m$  by Thomson's method
4. To study the absorption spectrum of iodine molecule
5. To perform stoichiometric calculations
6. To understand Physical Vapor Deposition (PVD) method (conceptual aspects)
7. To compare the different illumination effects on given solar cell
8. To study the counting efficiency and plateau curve for a given GM counter
9. To determine the numerical aperture and acceptance angle of optical fiber



**References:**

1. Sayer M. & Mansingh A., “Measurement, Instrumentation & Experiment Design in Physics and Engineering”, Prentice Hall India **2000**
2. Melissinos A.C. and Napolitano J, “Experiments in Modern Physics”, Academic Press **2000**
3. W.R. Runyan, “Semiconductor Measurements and Instrumentation”, McGraw Hill **2002**

**Instructional Method:**

- a. The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.
- b. The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.
- c. Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.
- d. Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.