

Code: APPH101	Physics Lab	L-T-P-CR-CH: 0-0-1-1-2
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Prerequisites: Physics at 10+2 level

Course Objectives

- CO1.** To develop experimental skills and techniques in physics laboratory settings.
- CO2.** To understand and apply fundamental physics concepts and principles.
- CO3.** To analyze data, draw conclusions, and communicate results effectively.
- CO4.** To foster critical thinking, problem-solving, and collaboration.
- CO5.** To communicate scientific findings through written reports.

Learning Outcomes

Upon the completion of the course, the students will be able to:

- LO1.** Apply relevant physics concepts to explain the underlying principles of each experiment.
- LO2.** Utilize appropriate laboratory equipment to measure physical quantities accurately.
- LO3.** Analyze and interpret experimental data, including graphical representation and identification of trends.
- LO4.** Calculate and evaluate uncertainties associated with measurements.
- LO5.** Compare experimental results with theoretical predictions and discuss potential sources of error.

Practicals:

Experiment 1: To determine acceleration due to gravity, g , using a compound pendulum.

Experiment 2: Verify Hooke's law of elasticity and hence determine the value of Young's modulus of elasticity of the material of a given rod by the method of flexure.

Experiment 3: To determine the moment of a bar magnet and horizontal component of earth's magnetic field by Magnetometers.

Experiment 4: To determine the wavelength of He-Ne laser using Young's double slit interference pattern.

Experiment 5: Prove the existence of atomic energy levels and determine the first excitation potential (eV) of Argon atom using Frank Hertz Experimental set-up.

Experiment 6: To determine the Planck's constant by solar cell.

Experiment 7: To study the Hall effect in extrinsic semiconducting samples and determine the type and density of majority charge carriers.

Text Books:

1. Practical Physics. R. K. Shukla and A. Srivastava, New Age International Private Limited, Third edition (1 April 2017).
2. B.Sc. Practical Physics. C. L. Arora, S Chand & Co Ltd, 2020.
3. B.Sc. Practical Physics. H. Singh and P. S. Hemne, S Chand & Co Ltd, 2018.
4. Practical Physics. P. R. Sasi Kumar, Prentice Hall of India; 1st edition (January 1, 2011).
5. A Textbook Of Engineering Physics Practical. R. Das, C. S. Robinson, R. Kumar, and P. K. Sahu, Laxmi Publications Pvt Ltd, Second edition (1 December 2015).