

APPLIED PHYSICS LAB

Common to ECE, CSE, IT, CSE(AI&ML) & CSE(DS) Branches

21AP105BS/21AP205BS**L T P C****0 0 3 1.5****COURSE OBJECTIVES:**

The course consists of experiments related to the principles of physics required for engineering students. It helps the students to correlate theory with experimental data. The student will be able to understand:

- 1.The behaviour of light due to interference and diffraction experimentally.
- 2.The work function of Photosensitive material.
- 3.The principle of operation and V-I characteristics of various Semiconductor devices.
- 4.To understand the behaviour of Laser light and its propagation in optical fibers experimentally.
- 5.To apply the principles of magnetism to a current carrying conductor.

COURSE OUTCOMES:

After completion of the course the student would be able to:

- CO 1: Demonstrate physical properties of light.
- CO 2: Examine the stopping potential and to determine work function of photosensitive material.
- CO 3: Demonstrate working principles of various Semiconductor devices.
- CO 4: Make use of optical fibers and lasers for engineering applications.
- CO 5: Determine the magnetic induction of a circular coil carrying current by applying the principles of magnetism.

EXPERIMENT – 1:

Newton's Rings:

Determination of Radius of Curvature of Plano Convex Lens.

EXPERIMENT – 2:

Diffraction Grating:

To determine the wavelength of given monochromatic light source.

EXPERIMENT – 3:

Photoelectric effect:

To determine work function of a given material.

EXPERIMENT – 4:

Hall effect:

To determine Hall co-efficient of a given Semiconductor

EXPERIMENT – 5:

Energy gap of P-N junction diode:

To determine the energy gap of a Semiconductor diode.

EXPERIMENT – 6:

Light emitting diode:

Plot V-I Characteristics of light emitting diode

EXPERIMENT – 7:

Solar Cell:

To study the V-I Characteristics of Solar cell.

EXPERIMENT – 8:

LASER:

To study the V-I and P-I characteristics of LASER source.

EXPERIMENT – 9:

Optical fiber:

To determine the bending losses of Optical fibers.

To determine the numerical aperture of Optical fibers.

EXPERIMENT – 10:

Stewart – Gee’s experiment:

Determination of magnetic field along the axis of a current carrying coil.

References:

1. Practical Physics by Dr. Patil Sriram
2. Physics for science and engineering by Pramod V Naik
3. Practical physics by Dr. Aparna & Dr. KV Rao, VGS Publications
4. C. L. Arora “Practical Physics”, S. Chand & Co., New Delhi, 3rd Edition 2012