# PHYSICS LAB
## (Common to all Branches)

**Course Code: 15BP1102**

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**Course Outcomes:**

At the end the course, the student will be able to

**CO 1** Demonstrate the elastic response of loaded beams; estimate the frequency of a vibrating system using standing wave pattern.

**CO 2** Familiarize with CRO; assess the resonant frequency and quality factor of electrical oscillations.

**CO 3** Estimate the strength of the magnetic field due to a current carrying coil.

**CO 4** Interpolate some of the physical parameters based on optical phenomena.

**CO 5** Realize explicit knowledge on the working and performance of photocells.

**Any TEN of the following 13 experiments shall be completed**

**ERROR ANALYSIS AND GRAPH DRAWING (LECTURE - DEMO)**

1. Bending of beams – Elliptical and Hyperbolic fringes - Determination of 'Y'.
2. Melde's experiment – determination of frequency of electrically maintained tuning fork.
3. Determination of wavelength of laser light using diffraction through a graded scale.
4. Particle size determination using He-Ne laser (Lycopodium powder).

5. Ion grating – determination of wavelengths of spectral lines of Mercury spectrum by normal incidence method.
6. Polarization of light – verification of Malu's law and to determine the Brewster's Angle for glass.
7. Determination of Planck's constant.
8. Solar cell characteristics – I-V characteristics, measurement of efficiency and Fill factor.
9. Stewart – Gee apparatus – study of variation of magnetic field along the axis of circular current carrying loop.
10. LCR series and parallel resonance circuit to study the frequency response.
11. Familiarity of CRO – Lissajjou's figures - determination of time period, voltage, frequency and phase of a wave.
12. Newton's Rings- determination of wavelength of the source/ radius of curvature of given convex lens.
13. Optical fibres- determination of Numerical aperture, acceptance angle and bending losses.

**Experiments offered beyond the curriculum:**

1. Torsional pendulum - comparison of rigidity modulii of various wires.
2. Spectrometer – determination of dispersive power of the material of a prism.