

# ENGINEERING PHYSICS LAB SYLLABUS

## Fundamental Frequency of a Stretched String (Sonometer)

- Determine the dependence of fundamental frequency on the length and tension of a stretched string.

## Hertz Experiment (EM Waves)

- Determine the characteristics of electromagnetic waves using Hertz's experiment.

## Wavelength of Laser Source (Diffraction Grating)

- Determine the wavelength of a He-Ne laser and diode lasers of different wavelengths using a diffraction grating.

## Wave Nature of Electrons (Graphite Sheet Diffraction)

- Demonstrate the wave nature of electrons by diffraction through a graphite sheet.

## Planck's Constant (Electroluminescence Process)

- Determine Planck's constant using the electroluminescence process.

## Numerical Demonstration of Schrödinger Equation

- Numerically demonstrate the discrete energy levels and wavefunctions using the Schrödinger equation (e.g., particle in a box problem as an assignment).

### **Refractive Index of a Prism (Spectrometer)**

- Determine the refractive index of a prism using a spectrometer (angle of the prism will be given).

### **Efficiency of a Solar Cell**

- Determine the efficiency of a solar cell through experimentation.

### **Acceptance Angle and Numerical Aperture of an Optical Fiber**

- Determine the acceptance angle and numerical aperture of an optical fiber.

### **Phase Velocity and Group Velocity (Simulation)**

- Demonstrate the concept of phase velocity and group velocity through a simulation.

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