

**PHYSICS Lab SYLLABUS**  
**(COMMON TO ALL BRANCHES)**

**Course Objectives**

- Make precise measurements using basic physical principles and acquire skills to handle the instruments
- Relates the theoretical Knowledge to the behavior of Practical Physical world.
- Analyze errors in the experimental data.
- Plot graphs between various physical parameters.

**Course Outcomes**

1. Conduct experiments, take measurements independently.
2. Write appropriate laboratory reports.
3. Compute and compare the experimental results and draw relevant conclusions.
4. Use the graphical representation of data and estimate results from graphs

**List of Experiments:**

1. To determine the Dielectric constant and Phase transition temperature of Lead Zirconium Titanate (PZT).
2. To draw the I - V Characteristics of P-N Junction diode and to evaluate the resistance.
3. To find the values of Electrical conductivity and energy gap of Ge crystal.
4. Determination of rigidity of modulus of Torsion pendulum.
5. Determination of carrier concentration, Mobility and Hall Coefficient of Ge crystal using Hall Effect Experiment.
6. To determine the constants of A, B and  $\alpha$  using Thermistor characteristics.
7. To draw the curve between the magnetizing field and the intensity of magnetization of the specimen (soft iron rod) and to find out  
i) Coercivity ii) Retentivity and iii) Hysteresis loss.
8. To draw the I - V Characteristics of a solar cell and to calculate the  
i) Fill factor Efficiency and ii) Series resistance.
9. To Determine the Numerical aperture (NA) of Optical fiber.
10. To determine the wave length of the given Laser source.

**Note:** Minimum eight experiments should be conducted in the semester

**Suggested Reading:**

1. N.K. De, "Basic Electrical Engineering", Universities Press, 2015.
2. J.B. Gupta, "Fundamentals of Electrical Engineering and Electronics" S.K. Kataria & Sons Publications, 2002.
3. J.B. Gupta, "Utilization of Electric Power and Electric Traction" S.K. Kataria & Sons Publications, 2010