CH161	ENGINEERING PHYSICS LAB	L	T	P	C	Int	Ext
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Semester II [First Year]

COURSE OBJECTIVES:

1. To familiarize the experiments to verify physics concepts such as interference, diffraction on light matter interaction.
2. To perform experiments to estimate the materials properties and to check their stability in science and engineering.
3. To analyze physics concepts and to design/problem solving skills, experimental set up for better and accurate measurements.
4. To understand and apply knowledge to measure and verify the values of certain constants in physics.

COURSE OUTCOMES:

After the successful completion of the course,students are able to

1. demonstrate the principle of interference, diffraction, light propagation in optical fibers and light matter interaction using lasers and conventional light sources.
2. calibrate and operate Function generator, CRO for making measurements.
3. acquire knowledge of electricity, magnetism and mechanics to estimate fundamental constants in physics.
4. draw conclusions from data and develop skills in experimental design.

EXPERIMENTS:

1. Lissajous' Figures - Calibration of a given audio oscillator.
2. Determination of A.C. supply frequency using Sonometer.
3. Variation of magnetic field along the axis of a circular current carrying coil.
4. Determination of Quality factor of a given Series resonance LCR circuit.
5. Characteristic curves of a given Photocell and measurement of Stopping Potential.
6. Determination of Fill factor of a given Photovoltaic cell.
7. Calculation of radius of curvature of a given Plano-convex lens by Newton's Rings experiment.
8. Determination of wavelength of a given laser source using diffraction grating.
9. Determination of Young's Modulus of a material - Non Uniform Bending.
10. Determination of Rigidity modulus of a wire using Torsional pendulum
11. Compound Pendulum - Determination of Acceleration due to Gravity.
12. Determination of Acceptance angle and Numerical Aperture (NA) of a given optical fiber.
13. Measurement of resistivity and energy band gap of a Semiconductor using Four-Probe method.
14. Interference fringes - Measurement of thickness of a given paper foil - wedge method.

Note:**

A minimum of 10(Ten) experiments have to be performed and recorded by the candidate to attain eligibility for Semester End Practical Examination.

LEARNING RESOURCES:

TEXT BOOK:

Physics Lab Manual: RVR & JCCE, Guntur.

REFERENCE BOOK(s):

1. Engineering Physics Lab Manual, Dr. C.V.Madhusudhana Rao, V. Vasanth Kumar 3rd edition, Scitech publications(India) Pvt. Ltd. Chennai.

2. Engineering Physics Practicals, Dr.B. Srinivasa Rao, V.K.V.Krishna, K.S.Rudramamba, University Science Press, Daryaganj, NewDelhi.