



# RAGHU ENGINEERING COLLEGE

(Autonomous)

(Approved by AICTE, New Delhi, Permanently Affiliated to JNTU-GV, Vijayanagaram)

Accredited by NBA (EEE, ME, ECE & CSE) & NAAC by A+ Grade)

Dakamarri, Bheemunipatnam Mandal, Visakhapatnam Dist. – 531 162 (A.P.)

Ph: +91-8922-248001, 248002 Fax: + 91-8922-248011

e-mail: [principal@raghuenggcollege.com](mailto:principal@raghuenggcollege.com) website: [www.raghuenggcollege.com](http://www.raghuenggcollege.com)

## ENGINEERING PHYSICS LAB

(Common to all Branches of Engineering)

AR – 23: 23B5201

L T P C

Course Code: 23B5201

0 0 2 1

### Course Objectives:

To study the concepts of optical phenomenon like interference, diffraction etc., recognize the importance of energy gap in the study of conductivity and Hall effect in semiconductors and study the parameters and applications of dielectric and magnetic materials by conducting experiments.

### List of Experiments:

1. Determination of radius of curvature of a given Plano convex lens by Newton's rings.
2. Determination of wavelengths of different spectral lines in mercury spectrum using diffraction grating in normal incidence configuration.
3. Determination of energy gap of a semi-conductor using p-n junction diode.
4. Magnetic field along the axis of a current carrying circular coil by Stewart Gee's Method.
5. Determination of temperature coefficients of a thermistor.
6. Determination of rigidity modulus of the material of the given wire using Torsional pendulum.
7. Sonometer: Verification of laws of stretched string.
8. Determination of Frequency of electrically maintained tuning fork by Melde's experiment.
9. Estimation of Planck's constant using photoelectric effect (**Virtual**).
10. Determination of Hall voltage and Hall coefficient of a given semi-conductor using Hall Effect. (**Virtual**)

### References:

- A Textbook of Practical Physics - S. Balasubramanian, M.N. Srinivasan, S. Chand Publishers, 2017.
- URL :[www.vlab.co.in](http://www.vlab.co.in) (**VIRTUAL LAB**)



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## Course Outcomes:

*By the end of the course, the learners will be able to:*

S.No.	Course Outcome	Blooms Taxonomy
CO1	Operate instruments related to optics, electricity and electronics (viz., spectrometer, Stewart-Gee apparatus etc)	L3
CO2	Interpret data (both theoretical and experimental) and subsequently learn how the important parameters can be derived from a given set of results.	L3
CO3	Summarise the data in-terms of graphs, plots and writing reports.	L3
CO4	Understand the theory related to the experiment and their application in their future course of time.	L2
CO5	Develop, design and carryout small scientific experiments and improve their physical understanding	L3

## CO – PO Mapping:

Course Outcomes (CO)	Program Outcomes (PO)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1		1				1	3			1
CO2	3	1		1				1	3			1
CO3	3	1		1				1	3			1
CO4	2	1		1				1	3			1
CO5	3	1		1				1	3			1
Average	2.8	1		1				1	3			1
Average (rounded)	3	1		1				1	3			1

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

*M. M. M.*

*C. C. C.*