

Suggested Experiments in Engg. Physics Lab

(Common to all Branches)

(Effective from the academic year 2018-19)

Course Code : 18PHYL16/26

Contact Hours/Week : 03

Total Hours: 42

Semester: I/II

CIE Marks : 40

SEE Marks: 60

Exams. Hours: 03

Credits: 1.5

Course Learning Objectives: This course (18PHY16/26) will enable students

To realize experimentally, the mechanical, electrical and thermal properties of materials, concept of waves and oscillations

Design simple circuits and hence study the characteristics of semiconductor devices

Sl. No	Title of the Experiment	To which Module it belongs
1	Determination of spring constants in Series and Parallel combination	I
2	Young's modulus by Uniform bending experiment	II
3	n & I by Torsional pendulum	II
4	Single Cantilever experiment	II
5	Radius of curvature of plano convex lens using Newton's rings	III
6	LCR Resonance (Series and Parallel)	I/III
7	Acceptance angle and Numerical aperture of an optical fiber	III
8	Wavelength of semiconductor laser using Laser diffraction	IV
9	Estimation of Fermi Energy of Copper	V
10	Study of Transistor characteristics	V
11	Study of Photodiode characteristics	V
12	Calculation of Dielectric constant by RC charging and Discharging	V

Note:-

1. In addition to above experiments, Reddy shock tube must be introduced as compulsory demo experiment
2. All 12 experiments are mandatory. Student has to perform 2 experiments in the semester end examination

Conduction of Practical Examination:

1. Examination shall be conducted for **100 marks**, later reduced to **60 marks**.
2. All experiments are to be included for practical examination.

Course Outcomes:

Upon completion of this course, students will be able to

1. Recall the concepts of interference of light, diffraction of light, Fermi energy
2. Understand the principles of operations of optical fibers and semiconductor devices such as photodiode, and NPN transistor using simple circuits
3. Determine elastic moduli and moment of inertia of given materials with the help of suggested procedures
4. Recognize the resonance concept and its practical applications
5. Understand the importance of measurement procedure, honest recording and representing the data, reproduction of final results