

LAB PROGRAMME FOR COMPLEMENTARY COURSES

(Lab examination will be conducted at the end of 4th semester)

The minimum number of experiments for appearing examination is **75% of total 24 experiments** in the syllabus. Basic theory of the experiment must be shown at the time of Examination. **Students must submit a certified fair record at the time of Examination.** Number of Questions per session for the practical Examination shall be 8, and a minimum of 6 questions in the Question paper shall be set for the Examination at the centre.

Semester 1 to 4 | Complementary Course V

PHY4C05: PHYSICS PRACTICALS I

36 Hours in each semester × 4 (Credit - 5)

	Course Outcome	CL	KC	Class Sessions allotted
CO1	Apply and illustrate the concepts of properties of matter through experiments	Ap	P	36
CO2	Apply and illustrate the concepts of electricity and magnetism through experiments	Ap	P	36
CO3	Apply and illustrate the concepts of optics through experiments	Ap	P	36
CO4	Apply and illustrate the principles of electronics through experiments	Ap	P	36

List of Experiments

1. Characteristics of Diode and Zener diode
2. Liquid lens- Refractive index of liquid and glass
3. Torsion pendulum- Rigidity modulus
4. Spectrometer- Refractive index of the material of prism
5. Deflection Magnetometer- Moment of a magnet (Tan-A & Tan - B positions)
6. Potentiometer-Measurement of resistance
7. Young's modulus – Uniform bending –using optic lever
8. Static torsion – Rigidity modulus
9. Spectrometer- Grating- Normal incidence
10. Melde's string- Frequency of fork (Transverse and Longitudinal mode)- (Mass determination by equal oscillation method / digital balance)

11. Half wave rectifier and Full wave rectifier
12. Field along the axis of a circular coil
13. Deflection Magnetometer- Moment of a magnet (Tan-C)
14. Potentiometer- Conversion of Galvanometer in to voltmeter –calibration by standard voltmeter
15. Viscosity of liquid- Capillary flow- Variable pressure head method (Mass determination by equal oscillation method / digital balance)
16. Logic gates – Verification of truth table
17. Carey Fosters bridge- Resistivity of the material of wire
18. Surface Tension-Capillary rise method - Radius by microscope.
19. Young's modulus of a cantilever- Pin and microscope method
20. Potentiometer-Calibration of low range voltmeter
21. Moment of inertia of fly wheel
22. Tangent galvanometer – Reduction factor
23. Searle's vibration magneto meter – Comparison of moments
24. Newton's rings- Wavelength of sodium light

Books of Study:

1. Electronics lab manual- K A Navas (vol 1 &2)
2. B.Sc Practical Physics- C L Arora

Reference book:

3. Practical Physics- S L Gupta & V Kumar