

Course Code	Course Name	Credits
26PH151	PROPERTIES OF MATTER LAB	02

### Objective

The objective of this laboratory course is to enable students to understand and verify fundamental principles of mechanics and properties of matter through experimental methods. Students will develop practical skills in conducting experiments, taking accurate measurements, analyzing data, and interpreting results.

1. Determination of  $g$  using compound pendulum.
2. Verification of Hook's law by stretching of wire method.
3. Determination of Young's modulus by non-uniform bending using optic lever, scale and telescope
4. Determination of Young's modulus by stretching of wire with known masses.
5. Determination of Young's modulus by uniform bending – load depression graph.
6. Determination of Young's modulus by non-uniform bending – scale & telescope.
7. Determination of Young's modulus by cantilever – load depression graph.
8. Determination of Young's modulus by cantilever – oscillation method
9. Determination of rigidity modulus by static torsion.
10. Determination of rigidity modulus without mass using Torsional pendulum.
11. Determination of rigidity modulus with masses using Torsional pendulum.
12. Determination of moment of inertia of an irregular body.
13. Verification of parallel axis theorem on moment of inertia.
14. Verification of perpendicular axes theorem on moment of inertia.
15. Determination of surface tension & interfacial surface tension by drop weight method.
16. Determination of co-efficient of viscosity by Stokes method – terminal velocity.
17. Determination of critical pressure for streamline flow.
18. Determination of Poisson's ratio of rubber tube.
19. Determination of viscosity by Poiseuille's flow method.
20. Determination radius of capillary tube by mercury pellet method.

*Students are required to perform and record at least eight experiments in the laboratory manual as part of the course requirements.*