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Phy-01103

PHYSICS LAB - I

1 Credit Hr

Pre-requisites: Intermediate with Physics and Math or A level Physics

Objectives:

To develop the experimental capability of students in understanding the concept of mechanics.

1. Modulus of Rigidity by Static & Dynamic method (Maxwell's needle or Barton's Apparatus).
2. To study the damping features of an oscillating system using simple pendulum of variable mass.
3. Measurement of viscosity of liquid by Stokes' or Poiseulli's method.
4. Surface tension of water by capillary tube or breakaway method.
5. To determine the value of "g" by compound pendulum or reverseable pendulum.
6. To study the dependence of centripetal force on mass, radius, and angular velocity of a body in circular motion.
7. To measure the velocity of sound by Kundts tube or CRO.
8. Determination of moment of inertia of a solid/hollow cylinder and a sphere etc.
9. To study the conservation of energy (Hook's law).
10. To study the laws of vibration of stretched string using sonometer.
11. To determine frequency of AC supply by CRO.
12. To determine Horizontal/Vertical distance by Sextant.

Note: Minimum number of practical to be performed is six.

Course outcome: students will be able to do graphical analysis, error calculations and determining of S.I. units.

Three experiments have to be performed before mid-term exams and three after mid-term.

Topics	No. of sessions
Measurement of viscosity of liquid by Stokes' or Poiseulli's method.	1+1
To determine the value of "g" by compound pendulum or reverseable pendulum.	1+1
To determine frequency of AC supply by CRO.	1+1
After mid-term	
Surface tension of water by capillary tube or breakaway method.	1+1
Finding moment of inertia of a simple body	1+1
Determination of moment of inertia of a solid/hollow cylinder and a sphere etc.	1+1

Course assessment:

- Mid-terms exams 15%
- Final-term exams 25%
- Lab performance 12%
- Lab reports 18%
- Viva voce 10%
- Sessional 20%

Method of teaching:

- Lectures.
- Tutorials
- Group activities and discussion

Resource Materials:

- Handouts.
- YouTube video lectures.