



GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

STRENGTH OF MATERIALS LAB

Course Code: GR15A2016
II Year II Semester

L:0 T:0 P:2 C:2

Prerequisites

- Knowledge of Mechanics of Solids
- Knowledge on Properties of civil engineering materials

Course Objectives

- Understand the effect of tension in mild steel bars under loading.
- Know about the resistance of various materials using hardness test.
- Awareness on the modulus of rigidity in springs using spring test.
- Have an idea on the compressive strength of concrete, wood etc.

Course Outcomes

- Ability to identify the stiffness of an elastic isotropic material.
- Ability to measure any substance's resistance to uniform compression.
- Ability to resistance of various materials against abrasion.

Contents

1. Tension test on metals.
2. Torsion test on metals.
3. Hardness test on metals.
4. Spring test on metals.
5. Compression test on wood or concrete or brick or block.
6. Impact test on metals.
7. Shear test on metals.
8. Use of electrical resistance strain gauges.
9. Deflection test on continuous beam.
10. Deflection test on cantilever beam.
11. Deflection test on simply supported beam.
12. Verification of Maxwell's Reciprocal theorem on beams.