


MECHANICS OF SOLIDS LABORATORY

Mechanics of solids or strength of materials is the study of deformation and behavior of a body due to mechanical, thermal, or other loads. The basis of all mechanical design lies in how the material reacts to outside forces. Hence, an in-depth understanding of material properties as well as how materials react to outside stimulus is important to a mechanical engineer. In this laboratory, students the student will perform tests on materials in tension, torsion, bending, and buckling.


The facilities available in the laboratory

- Compression testing machine
- Rockwell hardness tester
- Universal Testing machine (UTM)
- Spring testing machine
- Impact test machine
- Simply supported beam
- Cantilever beam.


| S.No | Name of major equipments | Photo/Image |
|------|-----------------------------|--|
| 1. | Compression testing machine |  |

| S.No | Name of major equipments | Photo/Image |
|------|---------------------------------|--|
| 2. | Universal Testing Machine (UTM) |  A photograph of a green Universal Testing Machine (UTM). The machine consists of two vertical columns connected by a horizontal crosshead. The crosshead has two sets of grips for holding test specimens. To the right of the columns is a control cabinet with a large circular dial on its front panel, which is used to measure the force applied during testing. The machine is mounted on a sturdy base. |

| S.No | Name of major equipments | Photo/Image |
|------|--------------------------|--|
| 3. | Torsion test machine |  A photograph of a green torsion test machine. The machine consists of a vertical green column on the left, a horizontal shaft passing through it, and a blue electric motor on the right. The motor is connected to the shaft via a coupling. The machine is mounted on a green metal stand with four legs. The background shows a plain wall with a power outlet and a shelf. |

| S.No | Name of major equipments | Photo/Image |
|------|--------------------------|---|
| 4. | Rockwell hardness tester |  |

| S.No | Name of major equipments | Photo/Image |
|------|--------------------------|--|
| 5. | Spring testing machine |  A blue spring testing machine is shown in a laboratory setting. The machine consists of a blue base with a vertical column and a horizontal crosshead. The crosshead has two vertical rods extending upwards, and a central vertical rod. A digital display is visible on the front of the base. The machine is mounted on a concrete base. In the background, there is a whiteboard and a window. |

| S.No | Name of major equipments | Photo/Image |
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| 6. | Impact test machine |  |

| S.No | Name of major equipments | Photo/Image |
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| 7. | Brinell hardness tester |  |

| S.No | Name of major equipments | Photo/Image |
|------|--------------------------|---|
| 8. | Vickers hardness tester |  |

| S.No | Name of major equipments | Photo/Image |
|------|--------------------------|---|
| 9. | Cantilever Beam |  |

| S.No | Name of major equipments | Photo/Image |
|------|--------------------------|---|
| 10. | Simple supported beam |  |