द्रव्य यांत्रिकी प्रयोगशाला
Mechanics of Material Lab

Major Equipments:

- Universal Testing Machine
- Fatigue Testing Machine
- Impact Testing Machine
- Rockwell Cum Brinell Hardness Tester
- Hooke's Law Apparatus
- Shear Force And Bending Moment Apparatus
- Strain Gauge Kit
- Surface Roughness Tester
- Digital Coating Thickness Gauge
- Anemometer Tachometer Hygrometer

Hardware:

- NI 9923 Terminal, 4Slot USB Chassis, NI 9237

Measuring Instruments:

- Microscopic Surface Tester
- Vernier Caliper
- Micrometer
- Bevel Protractor, Sine Bar,
- Slip Gauge Comparator Mechanical Type

In Charge:

Prof. Vaibhav Shivhare (7771940007)

Associate In Charge:

Prof. Krishan Kumar (9540052800)
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Physical In Charge:

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SAFETY AND SECURITY RULES TO BE FOLLOWED IN LABORATORY:

1. Always wear shoes before entering in the lab.
2. Do not touch anything without the permission of instructor/ lab assistant.
3. Read carefully the lab manual before performing experiments.
4. Do not tamper measuring instruments.
5. Do not open the casing of the equipment.
6. Switch off the power supply to the experimental setup on completion of the experiment.
7. Maintain clean and orderly laboratories and work area.
8. Be aware of the various experiment controls (start button, stop button, speed control) for each experiments.
9. Do not leave experiments running unattended.
10. Any injuries should be reported immediately for proper care.

GENERAL INSTRUCTIONS

1. Enter lab with closed footwear.
2. Boys should tuck in the shirts.
3. Long hair should be protected, let it not be loose specially near rotating machineries.
4. Any other machines/ equipments should not be operated other than the prescribed one for that day.
5. Power supply to your test table should be obtained only through the lab technician/ instructor.
6. Read carefully the lab manual before performing experiments.
7. Do not lean and do not be close to the rotating components.
8. Tools, apparatus and gauge sets are to be returned before leaving the laboratory.
9. Headings and detail should be neatly written:
   (i) Aim of the Experiment.
   (ii) Apparatus/Tools/Instruments Required.
   (iii) Procedure / Theory / Algorithm/ Program.
   (iv) Model Calculations.
   (v) Neat Diagram/ Flowcharts.
   (vi) Specification / Design Details.
   (vii) Tabulation.
   (viii) Graph.
   (ix) Result / Discussions.
10. Before doing the experiment, the student should get the circuit/ program approval by the faculty in charge.
11. Experiment date should be written in the appropriate place.
12. After completing the experiments the answer to the viva voice questions should be neatly written in the workbook.
13. Be patient, steady, systematic and regular.

LIST OF EXPERIMENTS:

1. Tension test.
2. Compression test.
3. Bending test.
4. Single / double shear test.
5. Fatigue test.
6. Hardness test on metals - Brinell and Rockwell hardness number. Rockwell hardness test.
7. Impact test on metal specimen.
8. Spring testing.
9. To draw bending moment diagram for simply supported beam under point loads.

List of experiments: (Objective)

1. To study the universal testing machine.
2. To perform the tensile test of metal specimen on UTM.
3. To perform compression test on UTM.
4. To perform bending test on UTM.
5. To perform the single/ double shear test on UTM.
6. To study the hardness testing machine and perform the Brinell hardness test.
7. To perform the Rockwell hardness test.
8. To study and impact testing machine and perform the izod impact test.
9. To perform the charpy impact test.
10. To study and perform the fatigue test.
11. To draw bending moment diagram for simply supported beam under point loads.

12. To determine the stiffness of the spring and modulus of rigidity of the spring wire.
13. Study of weight measurement by using strain gauge.