

MATERIAL SCIENCE & TESTING LAB

Name of Lab In-charge: Mr. Binit Kumar

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Course Outcomes:

CO	Outcomes
1	Analyze basic knowledge about the Mechanical properties of materials such as toughness, hardness, stiffness and modulus of rigidity etc.
2	Analyze the effect of heat treatment process on mechanical behaviour of materials.
3	Understand the knowledge regarding polishing operation of a small metallic specimens.
4	Acquire the knowledge of different engineering materials and their industrial applications.

List of Equipment:

1. Impact testing machine
2. UTM
3. Torsion testing Machine
4. Spring index testing Machine
5. Fatigue testing machine
6. Hardness testing Machine
7. Mounting press machine
8. Deflection of beam machine
9. Double disc polishing machine
10. Muffle furnace
11. Abrasive cut machine.

List of Experiments:

Sr. No.	As per AKTU	Performed/ Not performed
1	Strength test of a given mild steel specimen on UTM with full details and stress versus strain plot on the machine.	YES
2	Other tests such as shear, bend tests on UTM.	
3	Impact test on impact testing machine like Charpy, Izod or both.	YES
4	Hardness test of given specimen using Rockwell and Vickers/Brinell testing machines.	YES
5	Spring index test on 6spring testing machine.	YES
6	Fatigue test on fatigue testing machine.	YES
7	Creep test on creep testing machine.	
8	Experiment on deflection of beam, comparison of actual measurement of deflection with dial gauge to the calculated	YES

	one, and or evaluation of young's modulus of beam.	
9	Torsion test of a rod using torsion testing machine.	YES
10	Study of NDT (non-destructive testing) methods like magnetic flaw detector, ultrasonic flaw detector, eddy current testing machine, dye penetrant tests.	YES

Pictures of Labs: