

ME331 MACHINE TOOLS & METROLOGY LAB**Course Description & Objective:**

To create awareness on various mechanical measuring instruments. To make students familiar with various operations on machine tools.

Course Outcomes:

1. Hands on experience on lathe machine to perform turning, facing, threading operations.
2. Practical exposure on flat surface machining, milling and grinding operations.
3. Skill development in drilling and threading operations.
4. Linear and angular measurements exposure.

1. Section - A

1. Step turning and taper turning using lathe machine.
2. Thread cutting and knurling using lathe machine.
3. Drilling and step boring using lathe machine.
4. Drilling and Tapping using drilling machine.
5. Shaping of V groove using shaper.
6. Slotting of a keyway using slotter machine.
7. Milling of gear.
8. Surface Grinding.

2. Section - B

1. Length, Depth, Diameter measuring using vernier calipers & micrometer.
2. Bore measurement using bore gauge.
3. Use of gear teeth caliper for checking the chordal addendum and chordal height of spur gear.
4. Angle and taper measurements using Bevel protractor, Sine bar and slip gauges.
5. Screw thread measurement by Three wire method.
6. Surface roughness measurement by Tolysurf.