

III Year II Semester

L T P C

Code: 20ME6112

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METROLOGY & ICS LAB

Metrology Lab:

1. Measurement of lengths, heights, diameters by vernier calipers, micrometers etc.
2. Measurement of bores by internal micrometers and dial bore indicators.
3. Use of gear tooth vernier caliper for tooth thickness inspection and flange micrometer for checking the chordal thickness of spur gear.
4. Machine tool alignment test on the lathe.
5. Machine tool alignment test on drilling machine.
6. Machine tool alignment test on milling machine.
7. Angle and taper measurements with bevel protractor, Sinebar, rollers and balls.
8. Use of spirit level in finding the straightness of a bed and flatness of a surface.
9. Thread inspection with two wire / three wire method & tool makers microscope.
10. Surface roughness measurement with roughness measuring instrument.

ICS Lab:

1. Calibration of pressure gauge.
2. Calibration of transducer for temperature measurement.
3. Study and calibration of LVD Transducer for displacement measurement.
4. Calibration of strain gauge.
5. Calibration of thermocouple.
6. Calibration of capacitive transducer.
7. Study and calibration of photo and magnetic speed pickups.
8. Calibration of resistance temperature detector.
9. Study and calibration of a rotameter.
10. Study and use of seismic pickup for the measurement of vibration amplitude of an engine bed at various loads.
11. Study and calibration of McLeod gauge for low pressure.

Lab outcomes:

Students will be able to take measurements of length, heights, diameters and perform alignments for machine tools.

Students will be able to select proper measuring instrument and know requirement of calibration, errors in measurement etc. They can perform accurate measurements.