3/4 B.Tech. SIXTH SEMESTER

ME6L1 INSTRUMENTATION LAB Credits: 2

Lecture:- Internal assessment: 25marks
Lab Practice: 3 periods/week Semester end examination: 50 marks

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Objectives:

1. Develop and understand measurement techniques and calibration methods for various instruments.
2. Execute measurement of pressure, flow, stress –strain, speed, displacement and temperature.

Learning outcomes:

At the end of course the students will be able to:

1. Demonstrates the methods used for calibration of pressure gauges.
2. Measure displacement, temperature and pollution and calibrate the respective instruments.
3. Discuss calibration procedure of instruments used for measurement of speed, vibration and fluid flow.

Pre-Requisites:

Mechanical measurements

1. Calibration of Pressure Gauges
2. Calibration of Themistor for temperature measurement.
3. Study and calibration of LVDT transducer for displacement measurement.
4. Calibration of strain gauge for pressure measurement.
5. Calibration of thermocouple for temperature measurement.
6. Calibration of capacitive transducer for angular displacement.
7. Study and calibration of photo and magnetic speed pickups for the measurement of speed.
8. Calibration of resistance temperature detector for temperature measurement.
9. Study and calibration of a rotometer for flow measurement.
10. Study and use of a Piezo electric transducer for measuring vibration amplitude
11. Study and calibration of Mcleod gauge for low pressure
12. Use of air pollution instrument for determining percentage of pollutants