

Measurement & Instrumentation

Course Code: ME-312	Credit Hrs: 2-0
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Text Books & Reference Books:

1. E. Doebelin, Measurement Systems Applications and Design, McGraw Hill
2. D. G. Alciatore, M. B. Hinand, Introduction to Mechatronics and Measurement Systems.

Course Outline:

- **Introduction to measurement and instrumentation.** Significance of measurement, planning of experiments, general measurement system, calibration
- **Static and dynamic characteristics of instruments:** measurement sensitivity, range, accuracy, precision, repeatability, and uncertainty of instruments, measurement errors
- **Measurement** of length, displacement, force, torque, strain, frequency, pressure, flow, and temperature.
- **Introduction to data acquisition systems,** signal conditioning, display elements.

Assessments:

Quizzes, Assignments, Mid Exam, Final Exam, Report Writing