Course Title	Mechanical and thermal measurements
Professor	Fabrizio PATANÈ
Degree Course	Mechanical Engineering
ECTS	9
e-mail	fabrizio.patane@unicusano.it
Reference Book	Measurement Systems Application and Design (Ernest O. Doebelin)
Method of examination	written assessment and oral (facultative)

Topics Covered

The course will examine the main measurement methodologies, sensors and instruments used in the industrial field. For each transducer/instruments are considered (1) a description of the principle of operation, (2) the needed signal collection and conditioning hardware, (3) the causes of error and calibration procedures.
Topics:

- Metrology and measurement methodologies for quality assurance;
- Measurements of displacement / velocity / acceleration;
- Temperature Measurement;
- Force Measurement.

Course Objectives

The primary objective of the course is to provide students with the knowledge necessary to design and implement a measurement process, and to handle the instrumentation under a proper quality system management.

Expected Results

The topic of industrial measurements is wide, then only the most important arguments are presented within the course. The approach, however, allows the students to get a "method" and to be able to extend what they have learned for specific conditions to other, different issues.