

EEE.7-3.6 Measurement Systems and Sensors

Course contents: * Introduction to sensors. Definitions. Applications. MEMS. Microsensors. * Measurement system characteristics. Sensors, transducers, converters. * Sensor characteristics. * Noise sources and interferences in measurement systems and sensors. Capacitive and inductive coupling. Differential amplifiers. Isolators. * Analog electronic measurement systems. * Digital electronic measurement systems. * ADCs. * Non-electrical quantity measurements and related sensors. * Temperature measurement sensors. * Strain gauges. * Position sensors. * Hall-effect sensors. * Humidity sensors. * Piezoelectric sensors. * Flow sensors. * Chemical sensors. * Bio-sensors.