SEMESTER	DEPARTMENT	COURSE TITLE
Sixth	*Control Engineering*	*Sensors*
COURSE CODE	**HOURS:** 3	**COURSE SPECIFICATIONS**
EC609	**UNITS:** 3	*Practical Content*

1. ***Mechanical and Electromechanical Sensors***:

By using the following sensors:

- Potentiometer.
- Strain Gauge.
- Pressure Sensors.

To identify their behavior , natural frequency of material and how it can be calibrated.

2. ***Thermal Sensors:***

- Build and use of a simple Wheatstone bridge circuit with a differential amplifier for a resistance thermometer.
- Build and use of thermistors temperature sensing circuit with operational amplifier.

3. ***Radiation Sensors:***

- Build some hardware and software to transmit signals from IR LED to Phototransistor.
- Analyze the signals in both time and frequency domains.

4. **Sensor Applications :**

- Build and test torque and position sensors.
- Build and test accelerometer sensor.

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5. Digital Transducers:

Test and analysis the following encoders:

- Shaft Encoders.
- Incremental Optical Encoders.
- Absolute Optical Encoders.