

ELTR 2454 : Industrial Instrumentation

4 credit hours (2.5 lecture/3 lab)

This course gives students the basic understanding of pressure, level, temperature, flow and analytical instrumentation. Sensors, transmitters, recorders, controllers, their selection, calibration, installation, repair, and troubleshooting will be explored. Position measurement sensors and their applications will also be covered. Control systems documentation including piping and instrumentation diagrams and loop diagrams will be taught. Instrumentation and process control systems safety aspects will be emphasized. The student will set up and operate various process control instruments and analyze their performance.

Prerequisite(s)

ELTR 1004 and PSCI 1114

Course Outcomes

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

1. Understand basic principles of pressure, level, temperature, flow, analytical, and position measurements.
2. Select sensors and transmitters for the particular application.
3. Calibrate, install and operate the most common sensors and transmitters.
4. Classify and properly apply safety equipment in control systems.
5. Interpret drawings used in process control systems, including P&ID and loop diagrams.
6. Troubleshoot basic process control instruments and sens