



Engineering Technology & Advanced Manufacturing
A US DOL CBJT funded initiative

TITLE: Introduction to Process Instrumentation

DESCRIPTION:

- This course combines lecture and hands-on lab work to provide an overview of industrial process instrumentation. Technicians, engineers, and managers are provided with a foundation for communication with other control system professionals. This course comprises 1/3 of the content leading to the International Society of Automation (ISA CCST) certification.

LENGTH: 30 Class contact hours

COURSE ALIGNMENT: ETM 2315 Hydraulics and Pneumatics

OBJECTIVES:

- Communicate the latest trends in measurement and control
- Recognize the role of measurement and control in industrial processes
- Interpret measurement and control terminology
- Compare the methods and devices used in temperature, pressure, level, and flow measurement
- Apply ISA standards to interpret symbols and documentation

CONTENT TOPICS:

- Industrial Measurement Systems: Overview | Sensor Selection and Characteristics | Transmitters | Smart Transmitters
- Industrial Measurement Systems: Process Measurement | Standard Signals | Instrument Performance Terminology | Repeatability and Accuracy | Zero, Span, and Linearity Errors | Calibration Chart
- Pressure Measurement: Concepts / Instruments
- Level Measurement: Concepts / Level measurement instruments
- Flow Measurement: Types of Flow | Reynolds Number / Instruments for flow measurement/ Flow meter Selection
- Temperature Measurement and instruments
- Control Valves/ I/P Transducers
- Trends in Control Technologies: Smart Components/ Fieldbus

CERTIFICATION ALIGNMENT: Certified Control System Technician (CCST)

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