

Career and Technical Education

Certificate of Achievement — Instrumentation Technology

Professional Skills and Career Paths

Mining Instrumentation Technician, Water Treatment Instrumentation Technician, Pharmaceutical Instrumentation Technician, Elevator Instrumentation Technician, Food Processing Instrumentation Technician, Manufacturing Instrumentation Technician, Power Generator Instrumentation Technician, Process Control Systems Technician, Process Automation Technician.

Student Learning Outcomes

The knowledge and skills taught in the Instrumentation Technology Certificate of Achievement Program were developed through a study of industry requirements for the trade, particularly with the association, Instrumentation Systems and Process Automation. Additional input was given by the advisory board, and members of local industries, mines, and government agencies.

Graduates of the Instrumentation Certificate Program will have the knowledge and skills to:

- Understand the role of measurement and control in industrial processes.
- Interpret measurement and control terminology.
- Compare the methods of devices used in temperature, pressure, level, flow, and analytical measurement.
- Understand the operation and components of a feedback control loop.
- Apply ISA standards to interpret symbols and documentation.
- Connect, calibrate, and operate various measurement and testing devices.
- Interpret manufacturer’s instructions to correctly install and maintain pneumatic instruments.
- Build and tune a feedback control loop and apply the concepts of PID control.
- Calibrate and align pressure and temperature transmitters, calculating span and range values for various applications.
- Perform safely in the work environment, meeting and obeying all workplace safety requirements.

Formal admission to this program is required. Refer to page 86 for an outline of admission standards.

The following one-year program leads to a certificate in Instrumentation Technology.

Prerequisite: AAS or Certification in Electrical Systems Technology (or equivalency, based upon instructor approval). If students enter the program with appropriate technical skills but lack an official AAS or CA from an accredited institution, they will be required to complete one course in each of the following three areas:

1. MATH 116
2. BUS 110, PSY 208, or MGT 283
3. COM 101 or ENG 100, 101, 107, or 108, determined by placement testing.

Non-traditional credit or credit by examination may be possible. See an advisor for more information.

General Education Requirements	Credits
English/Communications. Determined by placement testing	3
COM 101, ENG 100, 101, 107, 108	
Computation —	3
MATH 116, 120, 126 or higher, or STAT 152	
Human Relations	
BUS 110 (recommended)	1-3

Program Requirements		Credits
BUS	102	Introduction to Entrepreneurship, or
MGT	103	Introduction to Small Business Management..... 3
EIT	233	Introduction to Instrumentation
EIT	240	Advanced Topics in Instrumentation..... 2
EIT	315	Pressure, Level, Flow Measurement..... 4
EIT	323	Installation and Configuration
EIT	333	Process (Piping) and Instrument Diagrams (P&IDs)
EIT	336	Control Valves and Regulators..... 4
EIT	348	Temperature Measurement and Control
EIT	368	Measurement Systems Analysis
EIT	437	Introduction to Control Systems..... 3
EIT	468	Advanced Control Systems

SUGGESTED COURSE SEQUENCE Certificate of Achievement— Instrumentation Technology

FALL—1st Semester		Credits
EIT	233	4
EIT	315	4
EIT	323	3
EIT	333	3
EIT	368	2
ENGLISH*		3
COMPUTATION*		3
TOTAL		22

SPRING—2nd Semester		Credits
EIT	240	2
EIT	336	4
EIT	348	3
EIT	437	3
EIT	468	3
BUS	102 or MGT 103	3
HUMAN RELATIONS*		1-3
TOTAL		19-21

***Choose with advisor.**

Minimum Credits: 41-43