

INSTRUMENTATION TECHNICIAN TRAINING

SEPTEMBER 2018—SEPTEMBER 2019

THIS COURSE WILL BE A COMBINATION OF ONLINE COURSES WITH HANDS ON LABS HELD AT RHODES STATE COLLEGE. COURSE WILL HELP PREPARE STUDENT FOR THE ISA CCST (INSTRUMENT SOCIETY OF AMERICA CERTIFIED CONTROL SYSTEMS TECHNICIAN) LEVEL I CERTIFICATION EXAM.

Course Learning Outcomes

- Basic Process Control—designed to help participants understand the principles and concepts of process control. Introduces symbols, diagrams, connections, and basic troubleshooting.
- Calibration and Test Equipment—helps participants understand the calibration and use of process control test equipment.
- Process Measurement— understand the principles of temperature, pressure, level, and flow as well as identifying the equipment for measuring each.
- Continuous Process Control—designed to help participants understand the controls, instrumentation, and application of continuous processes in manufacturing. Provides an overview of automatic processes as they apply to continuous processes in order to achieve the goals of safety, product quality, and process economy.
- Control Valves and Actuators—shows how the control valve operates and functions in its different applications in industrial settings. Covers the types of control valves and actuators, choosing the correct type, sizing and installation procedures.

Course Outline

Module 1—Begins September, 2018

Online Topics - Basic Process Control (9 hours):

1. Feedback Control
2. Process Control Modes
3. Process Characteristics
4. Process Variables
5. Instrument Symbols
6. Instrument Loop Diagrams
7. Piping Instrumentation Drawings
8. Mechanical Connections
9. Electronic Connections

Lab at Rhodes State College (8 hours) -

Monday, Sept. 24 and Wednesday, Sept. 26 from 1-5 pm
or Tuesday, Sept. 25 and Thursday, Sept. 27 from 1-5 pm

Module 2—Begins September, 2018

Online Topics—Calibration & Test Equipment (6 Hours):

1. Primary Calibration Standards
2. Pneumatic Test Equipment
3. Electronic Test Equipment
4. Oscilloscopes
5. Instrument Calibration
6. Instrumentation Errors

Online Topics—Process Measurement (8 Hours):

1. Thermometers and Thermocouples
2. Resistance and Radiation Devices
3. Manometers and Gages
4. Indicators and Transmitters
5. Level Measurement and Gages
6. Level Indicators and Transmitters
7. Flow Measurement Overview
8. Flow Sensors

Lab at Rhodes State College (8 Hours)

Monday, Oct. 1 and Wednesday, Oct. 3 from 1-5 pm
or Tuesday, Oct. 2 and Thursday, Oct. 4 from 1-5 pm

Module 3—Begins October 2018

Online Topics—Process Measurement (12 hours):

1. Solid State Devices
2. Integrated Circuits and Op Amps
3. Sensor and Transducer Principles
4. Transmitters
5. Transducers
6. Controllers, Indicators, and Recorders
7. Tuning
8. Sampling Systems and Gas Chromatograph Valves
9. Gas Chromatograph Ovens and Controllers
10. Spectroscopic Analyzers
11. Electrochemical Analyzers
12. Instrument Loop Troubleshooting

Online Topics— Continuous Process Control (4 hours)

1. Principles of Continuous Control
2. Application of Heat Exchanger Control
3. Application of Distillation control
4. Application of pH control

Lab at Rhodes State College : Dates and Times are to be determined

Module 4—Begins To-Be-Determined

Online Topics - Electronic Maintenance(7 hours):

1. Solid State Devices
2. Integrated Circuits and Op Amps
3. Sensor and Transducer Principles

Online Topics - Control Valves and Actuators

1. Basics and Functions
2. Types and Design
3. Fundamentals and Selection
4. Sizing and Installation

Lab at Rhodes State College(8 hours): to be determined

REGISTRATION

Name: _____

Company: _____

Address: _____

City, State and Zip Code: _____

Email address for online courses _____

Phone #: _____

INSTRUMENTATION TECHNICIAN TRAINING

Online Training Portion - \$1,000.00 Grant Funding available. Call for information.

Labs are \$895.50 per person for each 16 hour session. There are 4 sessions planned. You will be invoiced after completion of each session.

Registration deadline is one week before the listed start date. Registration confirmations are sent about a week to 10 days before the start date. Confirmations include location of the training classes, directions and a campus map.

PAYMENT INFORMATION

Total payment due: _____

☐ Check Enclosed (payable to Rhodes State College)

☐ Purchase Order #: _____
(Or attach PO to registration form. Read our invoicing policy!)

☐ Credit Card: VISA MasterCard Discover Card

Name on Card: _____

Card Number: _____

Expiration Date: _____

3-Digit Security Code: _____

REGISTRATION FEE

All prices listed are per person and include all training materials and online curriculum.

This course is subject to cancellation if minimum enrollment is not met.

Credit cards are not processed until just before the listed class start date.

Instrumentation Technician Training

\$ 1,000 Participant fee for online course
Grant Funding will cover full \$1,000.00 fee

\$ 895.50 for each 16 hour lab session. Four sessions required.

REGISTRATION FORM

Make checks payable to Rhodes State College

☐ **MAIL:** Rhodes State College, c/o WEDCE,
4240 Campus Drive, KH 141,
Lima OH 45804.

☐ **FAX:** (419) 995-8096

☐ **PHONE:** (419) 995-8351
(8:30am to 4:30pm, weekdays)

☐ **EMAIL:** Eilerman.T@RhodesState.edu
(Tammy Eilerman)

REFUND, INVOICING & CANCELLATION POLICIES

- You can withdraw from a workshop up to 3 days before its start date. A \$85 fee applies to any such cancellation.
- You will be charged 50% of the fee paid for cancellation within 3 days of the respective start date.
- No refunds are issued for no-shows. Substitutions are welcome.
- A full refund will be issued if a course cancels.
- A \$25 late payment charge will be imposed for non-payment of an invoice within the payment terms given on the invoice. Typical payment terms are net 30 days.
- WEDCE reserves the right to adjust these policies as needed.