

# Electrical Technologies

## Benefits of Training with Iowa Central

- Affordable Cost
- Experienced Trainers
- Flexible Training Facilities
  - We'll come to you for on-site training.
  - Access to Iowa Central's main campus facilities.
  - Training facilities at Iowa Central's East Campus.

## Training Program

Iowa Central's Electrical Technologies (credit) program was designed by local plant engineers, plant managers, and electrical technicians in response to an industry shortage of electricians. The training program is more specialized in order to fit the business' needs.

Select from any of the following areas for your training or we can customize classes to fit your needs.

- AC/DC Theory
- Industrial Electrical Systems
- Instrumentation and Control
- Motor Controls
- National Electrical Code
- Power Distribution and Wiring
- Pneumatic, Hydraulic and Motor Controls
- Networking Programmable Logic Controllers
- Motor Fundamentals
- Advanced Industry Electrical Systems
- Programmable Logic Controllers
- Advanced Programmable Logic Controllers
- Solid State Motor Controls
- Safety

View more details for each of these areas on the back of this sheet.

## Call us to get started!

**Julaine Bidleman**  
Director of Economic and  
Community Education  
Iowa Central Community College  
One Triton Circle  
Fort Dodge, Iowa 50501  
(515)574-1900  
bidleman@iowacentral.edu

**Riley Bleam**  
Assistant Director of Economic  
Development  
Iowa Central Community College  
One Triton Circle  
Fort Dodge, Iowa 50501  
(515)574-1908  
bleam\_r@iowacentral.edu

# Training Menu

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## AC/DC Theory

- Scientific Notation
- Metric Prefixes
- Ohm's Law to solve series circuits
- Ohm's Law to solve parallel circuits
- Alternating Current fundamentals
- True and Apparent power
- Mutual inductance
- Polar conversion
- Rectangular conversion
- Reactive filter networks

## Industrial Electrical Systems

- Busways
- Substations
- Industrial Lighting
- MCC's
- Industrial Power Systems
- Industrial Electrical Design & Fabrication
- Control Prints & Diagrams
- Relay Logic Circuit Design
- Control Panel Design & Layout

## Instrumentation & Control

- General process control system
- Transducers
- Actuators
- Calibration & Loop Tuning
- Closed loop control systems
- Open loop control systems
- Design of process control systems
- Construct process control systems
- Troubleshooting of process control systems
- P & ID Schematics

## National Electrical Code

- NEC
- OSHA
- Local building codes
- Terminology
- Wiring requirements

## Power Distribution & Wiring

- Utility System Operation
- Construct electrical systems
- Connect electrical systems
- Conduit sizing
- Wire sizing
- Transformers 10 & 30
- Residential/Commercial/Industrial wiring
- Panel boards
- Troubleshoot electrical systems

## Pneumatic, Hydraulic and Motor Controls

- Pneumatic systems
- Hydraulic systems
- Read, interpret, and construct fluid systems schematic diagrams

## Networking Programmable Logic Controls

- Install
- Maintain
- Allen Bradley Ethernet Networks
- Allen Bradley DeviceNet
- Allen Bradley ControlNet
- ProfiBus

## Control and Motor Fundamentals

- Industrial motor fundamentals
- Troubleshoot direct current motors and motor circuits
- Troubleshoot alternating current motors and motor circuits
- Motor replacement requirements
- NEC Code Requirements
- Construct motor control circuits
- Ladder Logic Diagrams

## Advanced Industrial Electrical Systems

- Install electrical systems
- Maintain electrical systems
- Installations
- Repair
- Maintenance
- Preventative maintenance
- Robotic work cell programming
- NFPA 79
- Relay Logic Circuit Design
- Relay Logic Circuit Troubleshooting
- Thermal Imaging

## Programmable Logic Controllers

- Ladder logic programming
- Instruction sets
- Interfacing to the PLC
- ControlLogix 5000
- PLC 5 & PLC 500
- Troubleshoot
- Search Functions

## Advanced Programmable Logic Controllers

- PLC's at advanced level
- Sequencers
- Subroutines
- Message instruction
- Data manipulation
- File structure

## Solid State Motor Controls

- Install
- Maintain
- Solid State Sensors
- Install
  - Variable frequency drives
  - Soft start motor starters
  - Solid-state motor controls
- Program
  - Variable frequency drivers
  - Soft start motor starters
  - Solid-state motor controls

## Safety

- Shop safety
- Lockout/Tag-out
- OSHA Regulations
- Meter usage
- Panel Safety
- Distribution of electricity
- Basic troubleshooting
- NFPA 70E
- Arc Flash Hazards

## Customized Training

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