

Electrical Systems for Facilities Maintenance 2 2 Days

Hybrid Course – Physical Hands-On Class with
Optional Free Online Course

In this course, students will gain valuable experience in working with electrical circuits and components. The course covers all aspects of electricity, including Ohm's Law, terminology, common circuits, and test equipment. Students will have "Real World" experience building and understanding commonly used circuits. They will learn how to properly use test equipment to measure current, voltage and resistance.

We will cover standard electrical systems and the different voltages that serve buildings.

Scope

ELECTRICAL DISTRIBUTION SYSTEMS

- Testing Standard and Isolated-Ground Receptacles
- Testing GFCI Receptacles
- Testing 120 V, Single-Phase Locking and Nonlocking Receptacles Special Use Receptacles
- Testing 240 V, Single-Phase Receptacles
- Testing 120/240 V, Single-Phase Receptacles
- Testing Three Phase Receptacles
- Neutral-to-Ground Voltage Troubleshooting
- Measuring Circuit Loading
- Testing Fuses
- Testing Circuit Breakers

ELECTRICAL DISTRIBUTION SYSTEMS(cont)

- Voltage Drop
 - Voltage Unbalance
 - Current Unbalance
 - Improper Phase Sequence
 - Harmonic Distortion
 - K-Rated Transformers
 - Transformer Test Measurements
- Hands-On
- Wiring single pole switches
 - Wiring three-way switches
 - Wiring 4-way switches
 - Wiring circuit breakers

LIGHTING SYSTEMS

- Incandescent Lamps
- Tungsten-Halogen Lamps
- Light-Emitting Diode (LED) Lamps
- Fluorescent Lamps
- High-Intensity Discharge Lamps
- Exit Lighting Systems
- Emergency Exit Lighting Systems
- Manual Lighting Switches
- Troubleshooting Manually Operated Lighting Switches
- Motion Sensors
- Light Level Sensors
- Contactors

HVAC SYSTEMS

- Electric Motor Malfunctions
- Motor Environmental and Mechanical Problems
- Single-Phase Motors
- Three-Phase Motors
- Troubleshooting Three-Phase Motors
- Heating Elements
- Electric Heating Circuit Devices
- Normally Closed and Normally Open Valves
- Troubleshooting Solenoid-Operated Directional Control Valves

MOTOR CONTROL

- Motor Power Circuits
- Disconnect Switches
- Power Circuit Terminal Identification
- Troubleshooting Motor Power Circuits
- Motor Control Circuits
- Control Switches
- Mechanical and Solid-State Relays
- Timers
- Troubleshooting Control Circuits
- Magnetic Motor Starters
- Electric Motor Drives
- Motor Circuit Connections
- Troubleshooting Motor Drives

Hands-On

- Wiring control circuits – 40+ Projects

Class Options:

2-Day Class - Electrical Systems for Facilities Maintenance 1

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