Technical Training Classes
Interactive Course Catalog

(Bookmarked)

Electrical Skills

Training For Technicians....By Technicians

"We Bring the Factory into the Classroom"

Basic Electricity for Maintenance Technicians

This 2- day class teaches learners how to apply basic laws and analysis techniques to traditional introductory circuits, as well as popular, real-world DC circuits. DC Principles combines standard theory of electricity with fundamentals of electronics and demonstrates electronic theory as applied to actual applications. Throughout the book, only those circuit theorems and analysis techniques that are practical and typically used in real-world circuit analysis are addressed. In addition, Kirchhoff's current law, Kirchhoff's voltage law,

This course is 50% Hand-On.
Each student will receive a college level textbook.

"We Bring the Factory into the Classroom"

Check our online schedule for classes near you

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This seminar can also be presented at your location

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Basic Electricity for Maintenance Technicians

Course Topics

Basic Concepts of Electricity
Electrical Safety
Resistance
Voltage Sources
The Simple Circuit and Ohm's Law
DC Series Circuits
DC Parallel Circuits
DC Series/Parallel Circuits
Complex Network Analysis Techniques
Electromagnetism

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

SEMINAR FEE
$1100 2 Day Option
$2200 4 Day Option

Class Options:
2 Day Class
- Basic Electricity for Maintenance Technicians- M-T

2 Day Class
- Industrial Wiring for Maintenance Technicians- W-R

4 Day Class - Industrial Electricity Workshop - M-R
- Basic Electricity for Maintenance Technicians- M-T
- Industrial Wiring for Maintenance Technicians- W-R

ONSITE TRAINING

TTC offers onsite training at your facility.
We can provide the same courses as we offer in public seminars. We can even design courses especially to meet your needs.

Advantages of On-Site Training
1. Modify the content to your specific needs
2. Protect company privacy
3. Workers remain on site in case of an emergency
4. Saves time and travel costs
5. Instructors can discuss your specifi c equipment
6. Problems can be openly discussed
7. Flexible scheduling
8. Increased price savings as the groups get larger
9. Promote teamwork & camaraderie among workers
10. More comfortable learning environment

Technical Training Classes
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Electrical Skills

Electrical Skills

Training For Technicians....By Technicians

Industrial Wiring for Maintenance Technicians

This 2-day class focuses on the installation and maintenance of electrical wiring in commercial and industrial facilities. The textbook covers the use of standards, codes, electrical drawings, and appropriate tools to safely and properly install and maintain raceway systems, enclosures, fittings, conductors, and devices. This edition is updated to the 2014 NEC®, expands coverage of electrical test instruments and ladder diagrams, includes descriptions of LED lamps and variable frequency drives, and adds a large section on renewable energy system installations.

This course is 50% Hand-On.
Each student will receive a college level textbook.

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Industrial Wiring for Maintenance Technicians

Course Topics

- Electrical Safety and Principles
- Tools and Test Instruments
- Electrical Standards and Codes
- Drawings and Specifications
- Conductors and Cables
- Raceway Systems
- Enclosures, Boxes, Conduit Bodies, and Fittings
- Commercial and Industrial Distribution Systems
- Devices and Circuits
- Commercial and Industrial Installations
- Structured Cabling Systems

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SEMINAR FEE
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Class Options:

2 Day Class
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2 Day Class
- Industrial Wiring for Maintenance Technicians- W-R

4 Day Class - Industrial Electricity Workshop - M-R
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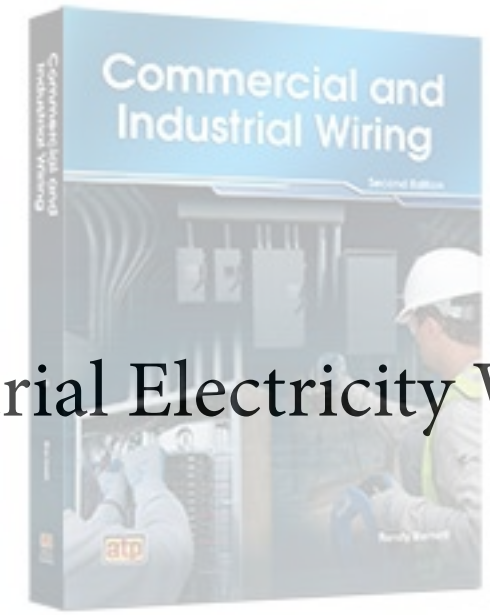
Electrical Skills

Training For Technicians....By Technicians

Electrical Skills



Industrial Electricity Workshop

This 4-day workshop combines Basic Electricity for Maintenance Technicians and Industrial Wiring for Maintenance Technicians to form this workshop.

This course is 50% Hand-On.
Each student will receive a college level textbook.

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Industrial Electricity Workshop

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Basic Concepts of Electricity
Electrical Safety
Resistance
Voltage Sources
The Simple Circuit and Ohm's Law
DC Series Circuits
DC Parallel Circuits
DC Series/Parallel Circuits
Complex Network Analysis Techniques
Electromagnetism

Electrical Safety and Principles
Tools and Test Instruments
Electrical Standards and Codes
Drawings and Specifications
Conductors and Cables
Raceway Systems
Enclosures, Boxes, Conduit Bodies, and Fittings
Commercial and Industrial Distribution Systems
Devices and Circuits
Commercial and Industrial Installations
Structured Cabling Systems

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SEMINAR FEE
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Class Options:
2 Day Class
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2 Day Class
- Industrial Wiring for Maintenance Technicians- W-R

4 Day Class - Industrial Electricity Workshop - M-R
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- Industrial Wiring for Maintenance Technicians- W-R

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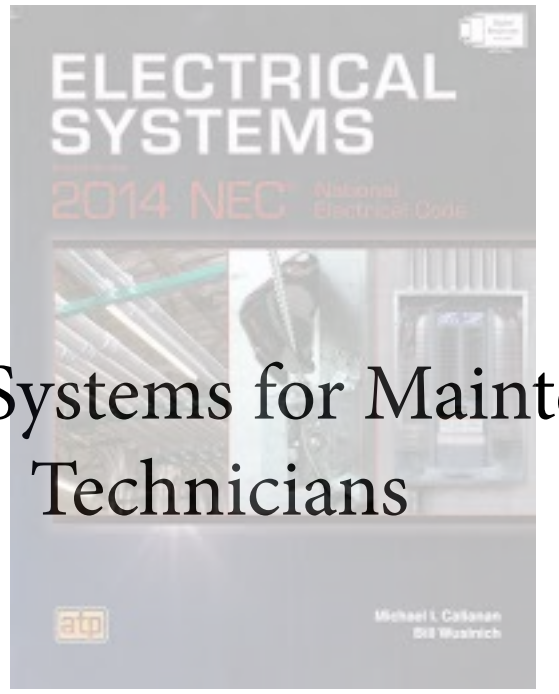
Training For Technicians....By Technicians



Electrical Systems for Maintenance Technicians

Electrical Systems for Maintenance Technicians is designed for journeyman and master electricians, inspectors, contractors, and others in the electrical trade. This class provides a comprehensive overview of the National Electrical Code®. Concise text and descriptive illustrations cover the Code and its application to wiring methods and materials, conductors and overcurrent protection devices, branch circuits and feeders, grounding, transformers, services, special locations, calculations, and more. Important changes in the 2014 NEC® are covered and identified throughout.

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Electrical Systems for Maintenance Technicians

Course Topics

- The National Electrical Code®
- Branch Circuits and Feeders
- Dwelling Load Calculations
- Services
- Conductors and Overcurrent Protection
- Grounding
- Wiring Methods
- Wiring Materials—Raceways and Boxes
- Wiring Materials—Switches, Switchboards, and Panelboards.
- Equipment for General Use
- Motors, Generators, A/C and Refrigeration, and Fire Pumps
- Transformers
- Special Locations

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Electrical Skills

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Training For Technicians....By Technicians

Conduit Bending and Fabrication for Maintenance Technicians

Conduit Bending and Fabrication was developed to help electricians and maintenance technicians learn to accurately bend electrical conduit. The class includes numerous step-by-step procedures showing the proper methods of conduit bending. Major emphasis is placed on learning the fundamentals required when bending EMT and rigid conduit. The operation of mechanical, electric, and hydraulic benders are also covered.

We use our own custom built training equipment designed to maximize student learning.

This course is 50% Hand-On.
Each student will receive a college level textbook.

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Conduit Bending and Fabrication for Maintenance Technicians

Course Topics

- Raceways and Conduit Systems
- Hand Bending - 90° Bends
- Hand Bending - Offsets and Kicks
- Hand Bending - Saddles and Corner Offsets
- Mechanical and Electric Benders
- Hydraulic Benders
- Other Conduit Types
- Threaded Conduit
- Advanced Bending Techniques
- Underground Conduit Installation Procedures

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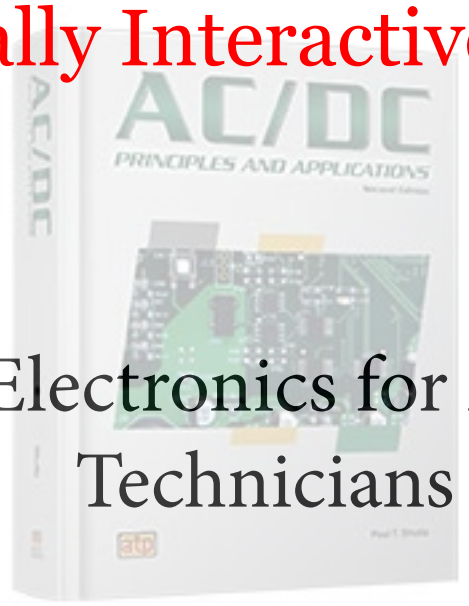
Training For Technicians....By Technicians

Electrical Skills

"Electronically Interactive Course"



Industrial Electronics for Maintenance Technicians

This 2- day class is comprehensive overview of solid state devices and circuitry. This new edition is designed for electricians, students, and technicians who have a basic understanding of electricity. Component and circuit construction, operation, installation, and troubleshooting are emphasized and supported by detailed illustrations. Various practical applications are presented throughout the book as they relate to temperature, light, speed, and pressure control. Electron current flow is used throughout the book. Electron current flow is based on electron flow from negative to positive.

Each student will receive a college level textbook.

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Industrial Electronics for Maintenance Technicians

Course Topics

Symbols, Circuits, and Safety
Test Instruments
Printed Circuit Board Construction and Troubleshooting
Soldering and Desoldering
Diode Applications and Troubleshooting
DC Power Supply Operation and Troubleshooting
Power Sources and Renewable Energy
Transducer Applications and Troubleshooting
Bipolar Junction Transistors (BJTs)
Transistors as Amplifiers
JFETs, MOSFETs, and IGBTs
Silicon-Controlled Rectifiers (SCRs)
Triacs, Diacs, and Unijunction Transistors
Integrated Circuits and Operational Amplifiers
Photonics
Digital Electronics Fundamentals
Solid State Relays (SSRs)
Solid State Technology in Programmable Controllers

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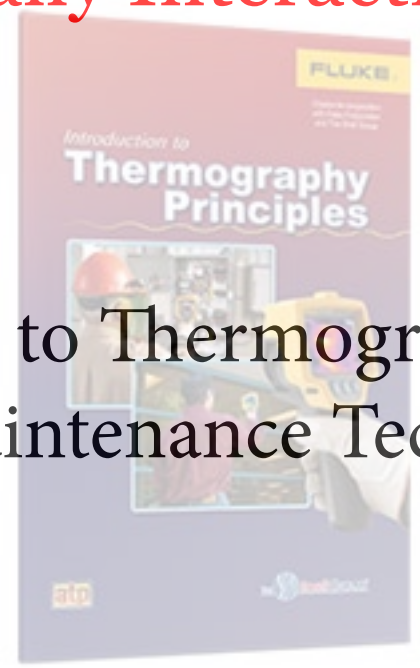

Introduction to Thermography Principles for Maintenance Technicians

This 2- day class provides an overview of the latest information on the safe, efficient, and practical use of thermal imagers. This full-color textbook depicts thermal images of electrical, HVAC, plumbing, hydraulic, and pneumatic circuits. Real-world examples illustrate commercial, industrial, municipal,and residential applications. In addition, the textbook provides information on thermography analysis, reporting, documentation, return on investment resources, and related technologies.

Each student will receive a college level textbook.

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Introduction to Thermography Principles for Maintenance Technicians

Course Topics

Infrared Thermography and Thermal Imagers
Thermography and Return on Investment
Training and Safety
Practical Applied Theory
Color Thermal Images of Applications
Thermography Applications
Inspection Methodologies
Analysis, Reporting, and Documentation
Thermography Resources
Other Related Technologies

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Electrical Safety

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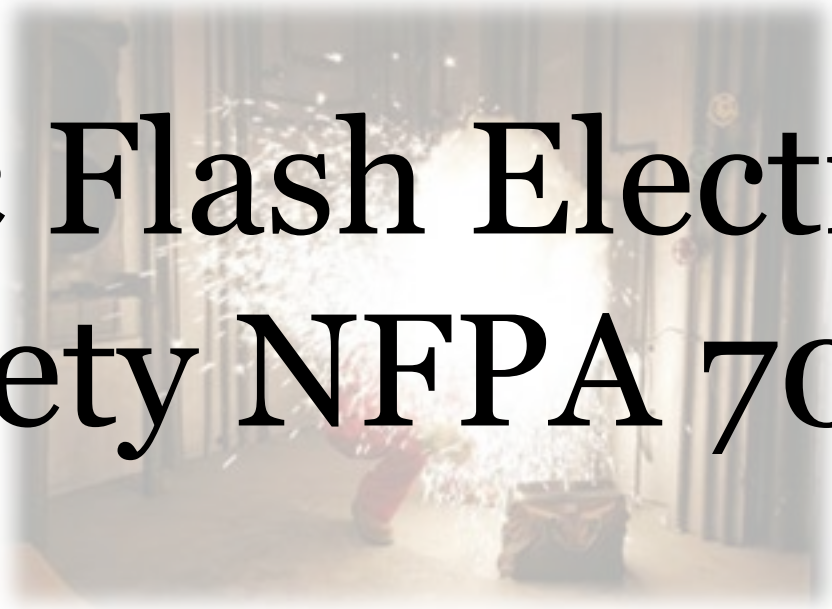

Arc Flash Electrical Safety NFPA 70E®

The course is designed to help companies fulfill their legal requirements relative to OSHA 29 CFR Part 1910, Subpart S Electrical, and NFPA 70E® "Standard for Electrical Safety in the Workplace®".

It is a comprehensive overview of electrical safety in the workplace. Both OSHA regulations and the NFPA 70E® 2015 standards are covered to provide a clear overview of proper electrical safety procedures. The information provided helps learners understand how to reduce risk and avoid electrical hazards in the workplace while still being productive, which makes these classes a valuable training tool for trainers, contractors, safety officials, and electricians in the field.

Participants will receive a college level textbook.

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

Click Here For Onsite Quote

Arc Flash Electrical Safety

Who Should take this course:

This course is for anyone who works on or around any electrically energized equipment at industrial plants, utilities or commercial and private building facilities.

Course Topics and Objectives

Electrical Hazards and Basic Electrical Safety Concepts
- Identify the differences between OSHA regulations
- and NFPA 70E standards.
- Define Public Inputs (Pis) and discuss the meetings
- and actions involved in the NFPA consensus process.
- Explain the effects of electrical-related injuries.
- Describe the recognized hazards associated with the
- use of electricity.
- Explain the importance of arc-rated clothing.
- Define incident energy.

Multi-Employer Worksites and Electrical Safety Programs
- Explain the multi-employer worksite policy.
- List the four types of controlling employers.
- Explain the responsibilities of the host employer and the contract employer.
- Describe the purpose of an electrical safety program (ESP).
- Identify the items in an ESP.
- List the standards that address ESPs.

Training of Qualified and Unqualified Workers
- List the requirements a qualified person must meet.
- List the requirements a qualified electrical worker must meet.
- Explain the new requirements and Informational Notes in NFPA 70E 130.

Approach Boundaries for Shock and Arc Flash Hazards
- Explain OSHA clearance distances.
- List the approach boundaries for shock hazards per NFPA 70E.
- Define Arc Flash Boundary and explain how to calculate boundaries for arc flashes.
- Explain the requirements of an energized electrical work permit (EEWP).

Performing a Hazard/Risk Analysis
- Define risk assessment.
- Identify the recognized electrical hazards.
- Define the type of hazards OSHA refers to in Section 5(a), General Duty Clause.
- List the items OSHA directs a company to identify as part of a risk assessment.
- Describe the importance of maintaining overcurrent protective devices.
- List the items that should be considered when assessing the risk involved in a particular task.

Establishing an Electrically Safe Work Condition
- Identify the OSHA regulations that cover electrical lockout/tagout.
- Explain the difference between induced voltage and backfed voltage.
- Explain how to perform absence-of-voltage testing.
- List the three types of test instruments that are commonly used to verify the absence of voltage.
- Explain simple and complex lockout/tagout procedures.
- Identify the NFPA 70E standards for training.
- List the equipment needed for proper lockout/tagout.
- List the items that must be addressed and the steps that must be taken while planning a lockout/tagout procedure.
- Explain the elements of control that should be included in a lockout/tagout procedure.
- Explain the standards concerning temporary protective grounding equipment per NFPA 70E 120.3.
- List the safety precautions that must be followed when using temporary protective grounding equipment.

Working on Energized Conductors and Circuit Parts
- Explain the importance of identifying when a task is considered energized work.
- List the conditions that may make energized electrical work appropriate.
- Describe the significance of an energized electrical work permit (EEWP).
- Explain the requirements for unqualified personnel working within or near the Limited Approach Boundary.
- Explain the requirements of an arc flash risk assessment.
- List precautions that are important for personal safety.
- List protective equipment that is not considered PPE.
- Determine the minimum approach distance between unqualified personnel and energized overhead lines.
- Explain the difference between touch potential and step potential.
- Describe the purpose of an equipotential zone.
- Explain employee training and job briefs.
- Explain how to properly service live-line tools.
- Describe how to safely apply temporary protective grounds.
- List the safety checks required by OSHA 1 9 1 0.269(o) for high-voltage and high-power testing.
- Describe the hazard of open-circuiting a secondary winding

Electrical Safety

Arc Flash Electrical Safety

Course Topics and Objectives

Portable Electric Tools and Flexible Cords

- Explain the advantages and disadvantages of flexible cords.
- List the guidelines for flexible cords that OSHA lists in 1 91 0.334.
- Explain the requirements for headlamps, receptacles, cord connectors, attachment plugs, and portable and vehicle-mounted generators.
- Identify the NFPA 70E standards for handling and inspecting portable electric equipment.
- Identify the various types of GFCis.
- Explain the regulations concerning overcurrent protection modification.

Choosing and Inspecting Personal Protective Equipment

- Define arc thermal performance value (ATPV).
- Define arc flash protective clothing.
- Explain the meaning of the words “use of” and “appropriate” as stated in OSHA 1 910.
- Explain the methods used to determine PPE per NFPA 70E.
- Explain the importance of head protection.
- Describe the inspection and storage process for rubber insulating gloves.
- Explain how the tables from NFPA 70E 1 30.7(C) are permitted to be used to determine personal protective equipment (PPE).
- Define leather protectors.
- List factors to consider when selecting protective clothing.

Guidelines for Common Electrical Tasks

- Explain risk assessment for common electrical tasks.
- Describe the task of removing and inserting low- or medium-voltage drawout-type circuit breakers.
- Describe the unique challenges involved when troubleshooting AC drives.
- Identify the hazards involved with o perating medium-voltage air-break switches.
- Identify the risks involved with operating equipment rated 240 V and less and equipment rated 240 V to 600 V.
- Explain the hazards involved with removing covers and
- Explain the task of inserting and removing motor control center buckets. panels from electrical enclosures.
- Describe the risks involved with replacing light ballasts.
- List the recommended PPE for troubleshooting circuits rated 120 V and less.
- Explain the task of replacing low-voltage motors .

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

SEMINAR FEE
$1100 2 Day Option
$1650 3 Day Option

Class Options:
2 Day class -
• Electrical Arc Flash Safety

3 Day class - ArcSafe Certification
• Electrical Arc Flash Safety - 2 Days
• Meter Safety - NOT A STAND-ALONE CLASS USED ARCSAFE CERTIFICATION CLASS ONLY- 1 Day

Notes:
1. Electrical Arc Flash Safety is a STAND-ALONE CLASS - NO CERTIFICATION - CERTIFICATE OF ATTENDANCE ONLY
2. Meter Safety - NOT A STAND-ALONE CLASS ARCSAFE CERTIFICATION CLASS ONLY
3. ArcSafe Certification is Electrical Arc Flash Safety and Meter Safety combined to form the 3 Day class.

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Electrical Safety

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“Electronically Interactive Course”

ArcSafe Certification

This course is designed for managers and safety professionals. It gives students a prospective from the technicians point of view on electrical safety and the point of view of safety professionals.

It clears up alot of the misconceptions that safety professionals may have about working around electrical equipment. And about the qualifications technicians must have.

Students will also receive a college level textbooks.

This class is 3 classes combined to form ArcSafe Certification.

Students will receive ArcSafe Certification with this course.

On day 3 we will cover Meter Safety, Lockout/Tagout for Maintenance Technicians and take the certification test.

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

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ArcSafe Certification

Course Topics

- Electrical Hazards and Basic Electrical Safety Concepts
- Multi-Employer Worksites and Electrical Safety Programs
- Training of Qualified and Unqualified Workers
- Approach Boundaries for Shock and Arc Flash Hazards
- Performing a Hazard/Risk Analysis
- Establishing an Electrically Safe Work Condition
- Working on Energized Conductors and Circuit Parts
- Portable Electric Tools and Flexible Cords
- Choosing and Inspecting Personal Protective Equipment
- Guidelines for Common Electrical Tasks

See Arc Flash Electrical Safety for detailed outline.

- Safety
- DMM Abbreviations, Symbols, and Terminology
- DMM Displays
- DMM Advanced Features
- Measuring AC Voltage
- Measuring DC Voltage
- Measuring Resistance and Continuity Testing
- Measuring AC and DC Current
- Ohm's Law and Power Formula
- Measuring Frequency and Duty Cycle
- Testing Diodes
- Measuring Capacitance
- DMM Accessories
- DMM Selection

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4:30 pm Class Ends

SEMINAR FEE
$1100 2 Day Option
$1650 3 Day Option

Class Options:
2 Day class -
• Electrical Arc Flash Safety

3 Day class - ArcSafe Certification
• Electrical Arc Flash Safety - 2 Days
• Meter Safety - .5 days
• Lockout/Tagout for Maintenance Technicians - .5 days

Notes:
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2. Meter Safety and Lockout/Tagout for Maintenance Technicians - NOT A STAND-ALONE CLASSES MUST BE TAKEN WITH ARCSAFE CERTIFICATION...
ARCSAFE CERTIFICATION CLASS ONLY
3. ArcSafe Certification is Electrical Arc Flash Safety, Meter and Lockout/Tagout for Maintenance Technicians Safety combined to form the 3 Day class.

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Training For Technicians....By Technicians

"Electronically Interactive Course"

Meter Safety

Meter Safety covers the topics needed to train technicians in the safe operation of digital multimeters (DMMs). Proper DMM usage when taking basic measurements can help prevent injury to personnel and costly damage to equipment. This course has been updated to include the latest NFPA 70E® safety requirements, DMM features and accessories, and safety practices in the field. Meter Safety is part of a comprehensive instructional package and is a must for all technicians, from contractors to maintenance staff.

Meter Safety is not a stand-alone class it is part of ArcSafe Certification class held on day 3.

Students will receive a college level textbook for this class.

Check our online schedule for classes near you

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This seminar can also be presented at your location

Click Here For Onsite Quote

Meter Safety

Course Topics

- Safety
- DMM Abbreviations, Symbols, and Terminology
- DMM Displays
- DMM Advanced Features
- Measuring AC Voltage
- Measuring DC Voltage
- Measuring Resistance and Continuity Testing
- Measuring AC and DC Current
- Ohm's Law and Power Formula
- Measuring Frequency and Duty Cycle
- Testing Diodes
- Measuring Capacitance
- DMM Accessories
- DMM Selection

Class Options:
2 Day class -
• Electrical Arc Flash Safety

3 Day class - ArcSafe Certification
• Electrical Arc Flash Safety - 2 Days
• Meter Safety - NOT A STAND-ALONE CLASS USED ARCSAFE CERTIFICATION CLASS ONLY- 1 Day

Notes:
1. Electrical Arc Flash Safety is a STAND-ALONE CLASS - NO CERTIFICATION - CERTIFICATE OF ATTENDANCE ONLY
2. Meter Safety - NOT A STAND-ALONE CLASS ARCSAFE CERTIFICATION CLASS ONLY
3. ArcSafe Certification is Electrical Arc Flash Safety and Meter Safety combined to form the 3 Day class.

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

SEMINAR FEE
$1100 2 Day Option
$1650 3 Day Option

ONSITE TRAINING
TTC offers onsite training at your facility.
We can provide the same courses as we offer in public seminars. We can even design courses especially to meet your needs.

Advantages of On-Site Training
1. Modify the content to your specific needs
2. Protect company privacy
3. Workers remain on site in case of an emergency
4. Saves time and travel costs
5. Instructors can discuss your specifi c equipment
6. Problems can be openly discussed
7. Flexible scheduling
8. Increased price savings as the groups get larger
9. Promote teamwork & camaraderie among workers
10. More comfortable learning environment

Technical Training Classes
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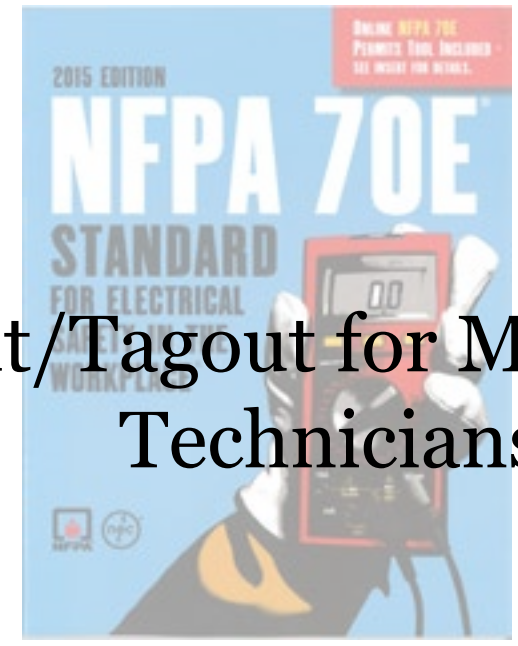
Electrical Safety

Training For Technicians....By Technicians

Electrical Safety

"Electronically Interactive Course"



Lockout/Tagout for Maintenance Technicians

This Hands-On Full Lockout Implementation class is designed for those who desire to develop an effective lockout program based on the industry's best practices. Students will learn about how to identify lockout hazards, how to comply with code requirements, how to write lockout procedures, and how to successfully implement a lockout program. Students will be asked to bring current copies of their lockout procedures for self-discovery and peer review.

Students will also receive a college level textbooks.

Students will receive ArcSafe Certification with this course.

This class is 3 classes combined to form ArcSafe Certification.

On day 3 we will cover Meter Safety, Lockout/Tagout for Maintenance Technicians and take the certification test.

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

Click Here For Onsite Quote

Lockout/Tagout for Maintenance Technicians

Course Topics

Common Lockout Program Problems & Challenges
LOTO Requirements & Electrically Safe Work Practices
Lockout Process Thinking
Review of Lockout Procedures
How to Write Lockout Procedures
Lean / 5S for Lockout Equipment
Risk Assessment for Alternative Procedures
Implementing Authorized Training Programs
Conducting Periodic Inspections
Contractors and Lockout
Change Management
ArcSafe Testing & Certification

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

SEMINAR FEE
$1100 2 Day Option
$1650 3 Day Option

Class Options:
2 Day class -
• Electrical Arc Flash Safety

3 Day class - ArcSafe Certification
• Electrical Arc Flash Safety - 2 Days
• Meter Safety - .5 days
• Lockout/Tagout for Maintenance Technicians - .5 days

Notes:
1. Electrical Arc Flash Safety is a STAND-ALONE CLASS - NO CERTIFICATION - CERTIFICATE OF ATTENDANCE ONLY
2. Meter Safety and Lockout/Tagout for Maintenance Technicians - NOT A STAND-ALONE CLASSES MUST BE TAKEN WITH ARCSAFE CERTIFICATION...
ARCSAFE CERTIFICATION CLASS ONLY
3. ArcSafe Certification is Electrical Arc Flash Safety, Meter and Lockout/Tagout for Maintenance Technicians Safety combined to form the 3 Day class.

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Technical Training Classes
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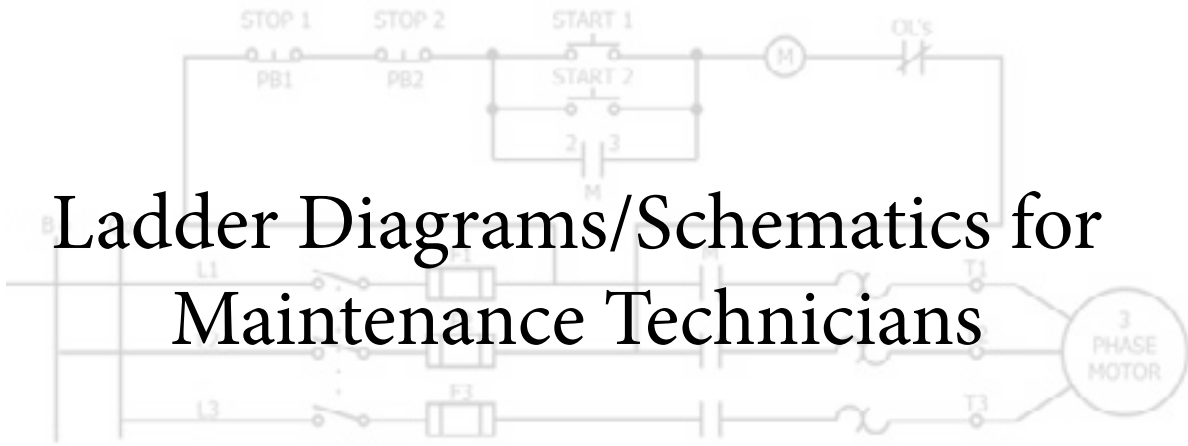
Electrical Safety

Troubleshooting/Motor Controls

Training For Technicians....By Technicians

"HANDS-ON"

"We Bring the Factory into the Classroom"



Ladder Diagrams/Schematics for Maintenance Technicians

In order for technicians to work on electrical systems, they must be able to understand and follow ladder diagrams and schematics. This course gives a complete understanding of the different types of electrical drawings and how to apply them in the field.

Students will complete various drawing exercises, which will progressively develop their skill level and enhance their ability to follow and troubleshoot control circuits.

This course is 80% Hands-On.

Participants will receive a college level textbook.

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

Click Here For Onsite Quote

Ladder Diagrams/Schematics for Maintenance Technicians

Course Topics

Electrical Symbols
Schematic Diagrams
Parallel Circuits
Rung Numbers
Converting Drawings
Power rails and wire colors
Circuit protection arrangement
Electrical symbol abbreviations
Ladder Diagrams
Series Circuits
Combination Circuits
Reference Numbers
Wire Numbers
Control element arrangement
Labels
Power circuits

Course Objectives:

Students will learn to:
- Identify common electrical symbols
- Apply common electrical formulas
- Read and interpret a variety of schematics and drawings
- Relate actual equipment components to diagram symbols
- Troubleshoot equipment problems based on symptoms
- Create drawings based on descriptions and observations
- Provide written/verbal descriptions of circuit diagrams

Class Options:

2 Day Class
- Ladder Diagrams/Schematics for Maintenance Technicians - M-T

2 Day Class
- Motor Controls for Maintenance Technicians - W-R

4 Day Class - Motor Controls Workshop - M-R
- Ladder Diagrams/Schematics for Maintenance Technicians
- Motor Controls for Maintenance Technicians

5 Day Class - Troubleshooting Workshop - M-F
- Ladder Diagrams/Schematics for Maintenance Technicians
- Motor Controls for Maintenance Technicians
- Troubleshooting Workshop - Not a stand-alone class

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

SEMINAR FEE
$1100 2 Day Option
$2200 4 Day Option
$2750 5 Day Option

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Troubleshooting/Motor Controls

Training For Technicians....By Technicians

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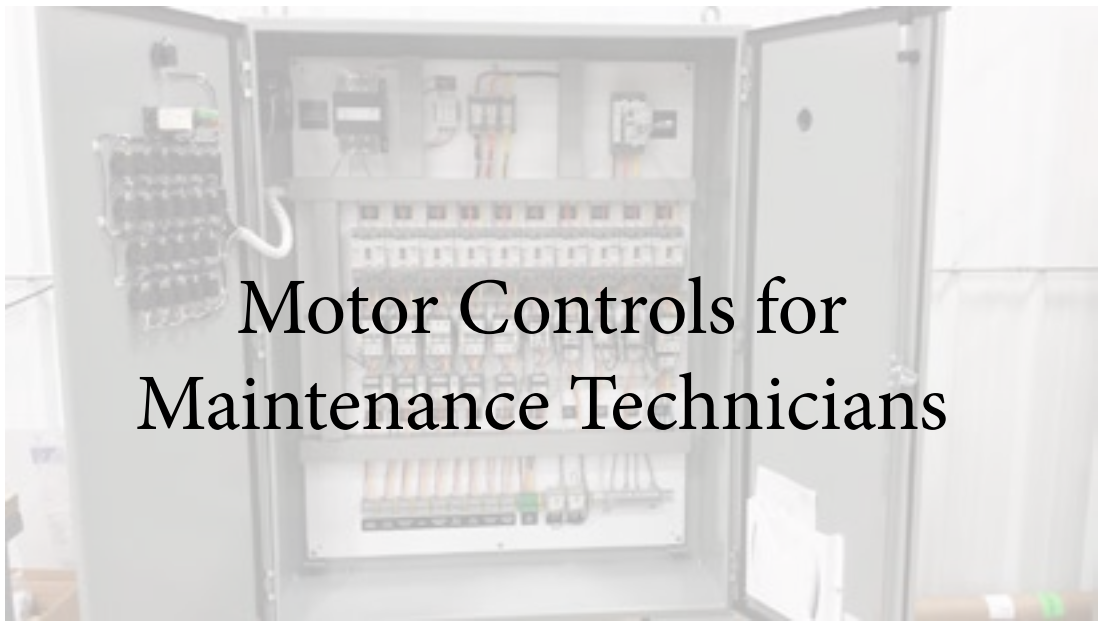

Motor Controls for Maintenance Technicians

For workers in the industrial and manufacturing sectors, understanding electrical motor controls is a valuable skill for production managers, technicians, designers and line workers. This course is a comprehensive introduction to motor controls , covering the essential topics for employees working in a variety of industrial and production settings.
Students will understand, follow and troubleshoot motor control circuits and understand how components work to determine if they are bad. This will save the company money by only changing the bad parts and teach the technician to quickly and accurately diagnose and repair problems.

Students will construct and test common motor control circuits. This will give them an understanding for how the circuits and components work, and a better understanding of how to quickly troubleshoot problems.

"DON'T BE A PARTS CHANGER"

This course is 80% Hands-On.

Participants will receive a college level textbook.

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

Click Here For Onsite Quote

Technical Training Classes
www.ttc.training

Motor Controls for Maintenance Technicians

Course Topics

General Principles of Motor Control
Overload Relays
Flow Switches and Sensors
Solenoid and Motor Operated Valves T
emperature Sensing Devices
Proximity Detectors Photodetectors
Schematics and Wiring Diagrams
Basic Control Circuits
Jogging and Inching Sequence Control
Single-phase, three-phase and DC Motors Motor Installation
Connection diagrams
Theory of operation
Phase/RotationControl circuits
Drawing symbols
One line drawings
NEMA symbols
Manual Starters
Relays, Contactors, and Motor Starters
The Control Transformer
Timing Relays
Pressure Switches and Sensors
Float Switches
Limit Switches
Hand-Off Automatic Controls
Forward-Reverse Control
Start-Stop Push-Button Control
Multi-Pushbutton Stations
Basic Parts of a motor
Motor construction
Motor types

Course Objectives:

Students will learn to:

- Wire and troubleshoot basic electrical control circuits to develop a logical, systematic approach to troubleshooting
- How to troubleshoot pushbutton, relay, motorstarter and other common component problems
- How to wire basic electrical circuits using wiring diagrams
- Recognize the different types of electrical control ladder diagram
- Read a basic electric circuit diagram
- Perform continuity and resistance checks on relay coils and contacts, overloads, fuses, circuit breakers, switches and other control circuit components.

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

SEMINAR FEE
$1100 2 Day Option
$2200 4 Day Option
$2750 5 Day Option

Class Options:

2 Day Class
- Ladder Diagrams/Schematics for Maintenance Technicians - M-T

2 Day Class
- Motor Controls for Maintenance Technicians - W-R

4 Day Class - Motor Controls Workshop - M-R
- Ladder Diagrams/Schematics for Maintenance Technicians
- Motor Controls for Maintenance Technicians

5 Day Class - Troubleshooting Workshop - M-F
- Ladder Diagrams/Schematics for Maintenance Technicians
- Motor Controls for Maintenance Technicians
- Troubleshooting Workshop - Not a stand-alone class

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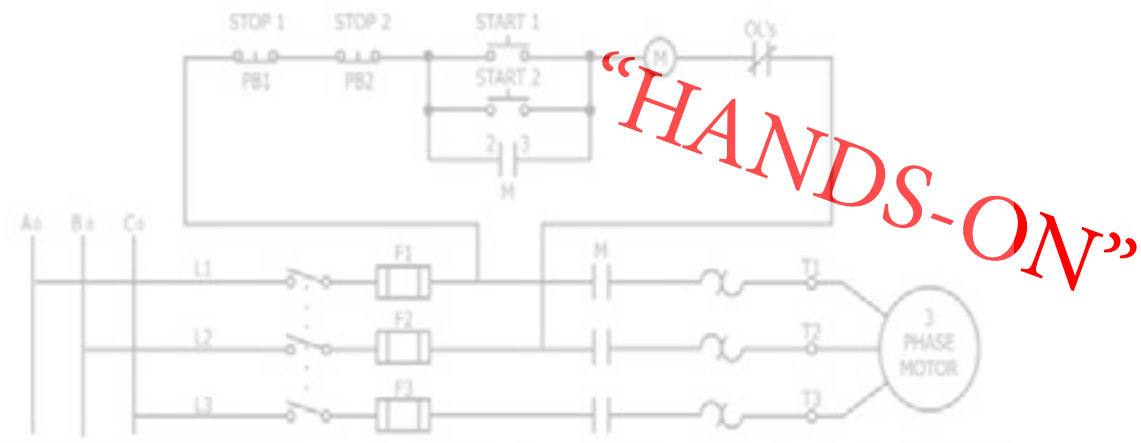
10. More comfortable learning environment

Troubleshooting/Motor Controls

Troubleshooting/Motor Controls

Training For Technicians....By Technicians

"We Bring the Factory into the Classroom"



"HANDS-ON"

Motor Controls for Maintenance Technicians Workshop

This 4-day workshop combines Ladder Diagrams and Schematics for Maintenance Technicians and Motor Controls for Maintenance Technicians to form this workshop.

This course is 90% Hands-On.
We use custom training equipment made to be just like the equipment on the floor.
Students will complete various drawing exercises, which will progressively develop their skill level and enhance their ability to follow and troubleshoot control circuits.

"DON'T BE A PARTS CHANGER"

This course is 90% Hands-On.

Participants will receive a college level textbook.

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

Click Here For Onsite Quote

Technical Training Classes
www.ttc.training

Motor Controls for Maintenance Technicians Workshop

Course Topics

Electrical Symbols
Schematic Diagrams
Parallel Circuits
Rung Numbers
Converting Drawings
General Principles of Motor Control
Overload Relays
The Control Transformer
Pressure Switches and Sensors
Flow Switches and Sensors
Solenoid and Motor Operated Valves
Proximity Detectors
Schematics and Wiring Diagrams
Start-Stop Push-Button Control
Multi-Pushbutton Stations
Jogging and Inching
Single-phase, three-phase and DC Motors
Connection diagrams
Theory of operation
Motor types
Ladder Diagrams
Series Circuits
Combination Circuits
Reference Numbers
Wire Number
Manual Starters
Relays, Contactors, and Motor Starters
Timing Relays
Float Switches
Limit Switches
Temperature Sensing Devices
Photodetectors
Basic Control Circuits
Hand-Off Automatic Controls
Forward-Reverse Control
Sequence Control
Motor Installation
Motor construction
Basic Parts of a motor
Phase/Rotation

SEMINAR FEE
$1100 2 Day Option
$2200 4 Day Option
$2750 5 Day Option

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

Class Options:
2 Day Class
- Ladder Diagrams/Schematics for Maintenance Technicians - M-T

2 Day Class
- Motor Controls for Maintenance Technicians - W-R

4 Day Class - Motor Controls Workshop - M-R
- Ladder Diagrams/Schematics for Maintenance Technicians
- Motor Controls for Maintenance Technicians

5 Day Class - Troubleshooting Workshop - M-F
- Ladder Diagrams/Schematics for Maintenance Technicians
- Motor Controls for Maintenance Technicians
- Troubleshooting Workshop - Not a stand-alone class

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10. More comfortable learning environment

Technical Training Classes
www.ttc.training

Troubleshooting/Motor Controls

Troubleshooting/Motor Controls

Training For Technicians....By Technicians

"We Bring the Factory into the Classroom"

"HANDS-ON

This 5-day workshop combines Ladder Diagrams and Schematics for Maintenance Technicians and Motor Controls for Maintenance Technicians to form a 5-day class. Students use the fundamentals they learned in the first 4 Days to troubleshoot our custom-training units.

This course is 90% Hands-On.
We use custom training equipment made to be just like the equipment on the floor.

"DON'T BE A PARTS CHANGER"

This course is 90% Hands-On.

Participants will receive a college level textbook.

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

Click Here For Onsite Quote

Motor Controls for Maintenance Technicians Workshop

Course Topics

Electrical Symbols
Schematic Diagrams
Parallel Circuits
Rung Numbers
Converting Drawings
General Principles of Motor Control
Overload Relays
The Control Transformer
Pressure Switches and Sensors
Flow Switches and Sensors
Solenoid and Motor Operated Valves
Proximity Detectors
Schematics and Wiring Diagrams
Start-Stop Push-Button Control
Multi-Pushbutton Stations
Jogging and Inching
Single-phase, three-phase and DC Motors
Connection diagrams
Theory of operation
Motor types

Ladder Diagrams
Series Circuits
Combination Circuits
Reference Numbers
Wire Number
Manual Starters
Relays, Contactors, and Motor Starters
Timing Relays
Float Switches
Limit Switches
Temperature Sensing Devices
Photodetectors
Basic Control Circuits
Hand-Off Automatic Controls
Forward-Reverse Control
Sequence Control
Motor Installation
Motor construction
Basic Parts of a motor
Phase/Rotation

SEMINAR FEE
$1100 2 Day Option
$2200 4 Day Option
$2750 5 Day Option

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

Class Options:
2 Day Class
- Ladder Diagrams/Schematics for Maintenance Technicians - M-T

2 Day Class
- Motor Controls for Maintenance Technicians - W-R

4 Day Class - Motor Controls Workshop - M-R
- Ladder Diagrams/Schematics for Maintenance Technicians
- Motor Controls for Maintenance Technicians

5 Day Class - Troubleshooting Workshop - M-F
- Ladder Diagrams/Schematics for Maintenance Technicians
- Motor Controls for Maintenance Technicians
- Troubleshooting Workshop - Not a stand-alone class

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Technical Training Classes
www.ttc.training

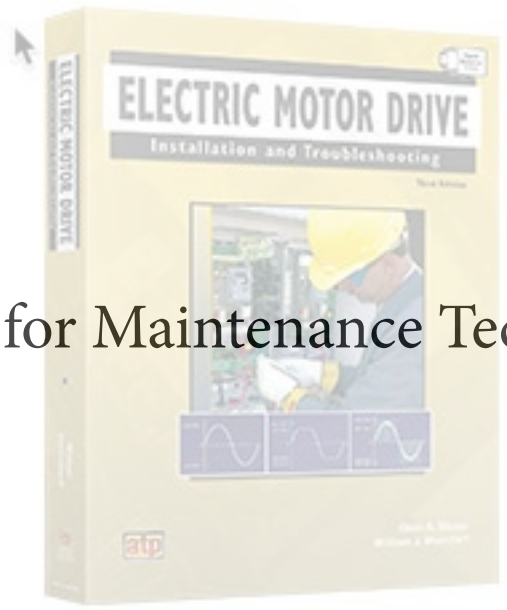
Troubleshooting/Motor Controls

Troubleshooting/Motor Controls

Training For Technicians....By Technicians

"We Bring the Factory into the Classroom"

"HANDS-ON"



VFDs for Maintenance Technicians

This 2-day class is designed for technicians in the field responsible for installing, programming, troubleshooting, and retrofitting electric motor drives. This industry-leading resource begins with electric motor principles, power requirements, and control methods and focuses on the safe operation, installation, startup, and troubleshooting of electric motor drives.

This class is 50% Hands-On.

We use custom training equipment made to be just like the equipment on the floor.

Participants will receive a college level textbook.

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

Click Here For Onsite Quote

Technical Training Classes
www.ttc.training

VFDs for Maintenance Technicians

Course Topics

Overview of Electric Motor Drives
Electric Motor Drive Safety
Electric Motor Load and Power Requirements
Electric Motor Types
Electric Motor Control
Electric Motor Installation
Solid State Electric Motor Drive Components
Electric Motor Drive Operation Fundamentals
Electric Motor Drive Installation Procedures
Electric Motor Drive Programming
Electric Motor Drive Test Tools
Electric Motor Drive Start-Up Procedures
Electric Motor Drive Troubleshooting
Electric Motor Drive Selection
Electric Motor Drive Retrofit Installation Procedures

SEMINAR FEE
$1100 2 Day

SEMINAR AGENDA
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8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

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Troubleshooting/Motor Controls

Troubleshooting/Motor Controls

Training For Technicians....By Technicians

"HANDS-ON"

"We Bring the Factory into the Classroom"

Instrumentation and Process Control for Maintenance Technicians

Instrumentation and Process Control for Maintenance Technicians
is a comprehensive class that provides a technician-level approach to instrumentation used in process control. With an emphasis on common industrial applications, this textbook covers the four fundamental instrumentation measurements of temperature, pressure, level, and flow, in addition to position, humidity, moisture, and typical liquid and gas measuring instruments.

"DON'T BE A PARTS CHANGER"

This course is 50% Hands-On.

Participants will receive a college level textbook.

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

Click Here For Onsite Quote

Motor Controls for Maintenance Technicians

Course Topics

- Process control and factory automation measurement instruments and applications
- Control valves and other final elements
- Digital communication systems and controllers
- Overview of control strategies for process control
- Safety systems and installation in hazardous locations
- Systems approach to integration of instruments in process control

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

SEMINAR FEE
$1100 2 Days

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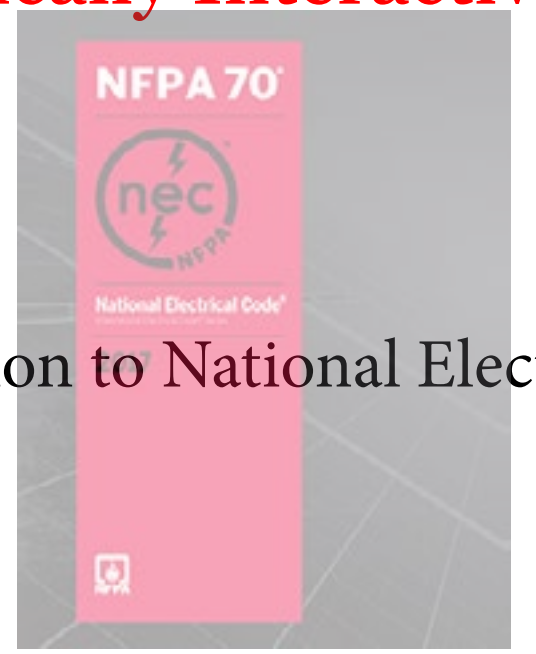
Troubleshooting/Motor Controls

Code Classes

Training For Technicians....By Technicians

"Electronically Interactive Course"



Introduction to National Electrical Code

This Course provides a solid understanding of how to navigate and use the National Electrical Code as it applies to maintenance technicians. It explains terminology and definitions.

Understanding the purpose, language, and organization of NFPA 70: National Electrical Code (NEC) is critical to proper installation and maintenance of electrical equipment.

This course was developed especially for maintenance technicians. With easy to understand explanations of the code by an experience technician, this course is a must to maintain a safe, reliable electrical system.

This course is 50% Hand-On.
Each student will receive a current National Electrical Code book.

"We Bring the Factory into the Classroom"

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

Click Here For Onsite Quote

Introduction to National Electrical Code

Course Topics and Objectives

Introduction to the National Electrical Code® (NEC)

- NEC® layout as the first step in successful navigation
- Differences between chapters 1-4 and 5-9
- How to quickly put yourself in the right chapter of the National Electrical Code®

Finding Specific Information in Chapter 1 General:

- Key words and definitions you must know
- Installation requirement topics

Finding Specific Information in Chapter 2 Wiring and Protection on:

- Use and Identification of Grounded Conductors
- Branch Circuits
- Feeders
- Branch-Circuit, Feeder and Service Calculations
- Outside Branch Circuits and Feeders
- Services
- Overcurrent Protection
- Grounding
- Transient Voltage Surge Suppressors

Finding Specific Information in Chapter 3 Wiring Methods and Materials on:

- Wiring Methods
- Conductors for General Wiring
- Cabinets, Cutout Boxes, Meter Socket Enclosures Outlet, Device, Pull, and Junction Boxes; Conduit Bodies; Fittings; and Manholes Armored Cable
- Nonmetallic-Sheathed Cable: Types NM, NMC and NMS
- Flexible Metal Conduit: Type FMC
- Liquidtight Flexible Metal Conduit: Type LFMC Rigid Nonmetallic Conduit: Type RNC
- Liquidtight Flexible Nonmetallic Conduit: Type LFNC Electrical Nonmetallic Tubing: Type ENT
- Auxiliary Gutters
- Busways
- Cablebus
- Metal Wireways
- Surface Metal & Nonmetallic Raceways
- Cable Trays

Class Options:

2 Day Class
- Introduction to the National Electrical Code

3 Day Class
- National Electrical Code for Maintenance Technicians

5 Day Class – National Electrical Code Workshop
- Introduction to the National Electrical Code - 2 Days
- National Electrical Code for Maintenance Technicians - 3 Days

The 5 day workshop combines Introduction to the National Electrical Code and National Electrical Code for Maintenance Technicians to form a 5 day class.

Finding Specific Information in Chapter 4: Equipment for General Use on:

- Flexible Cords and Cables
- Fixture Wires
- Switches
- Receptacles, Cord Connectors, and Attachment Caps Switchboards and Panelboards
- Luminaires, Lamp holders, Lamps
- Appliances
- Fixed Electric Space-Heating Equipment
- Motors, Motor Circuits, and Controllers, including Disconnecting Means for Motors
- Air Conditioning and Refrigeration Equipment
- Transformers and Transformer Vaults
- Equipment over 600 Volts, Nominal

Finding Specific Information in Chapters 5 through 8 on:

- The interrelationships between the first four chapters and these chapters
- Special Occupancies
- Special Equipment
- Special Conditions
- Communication Systems

Finding Specific Answers from Tables in Chapter 9

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

SEMINAR FEE
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Code Classes

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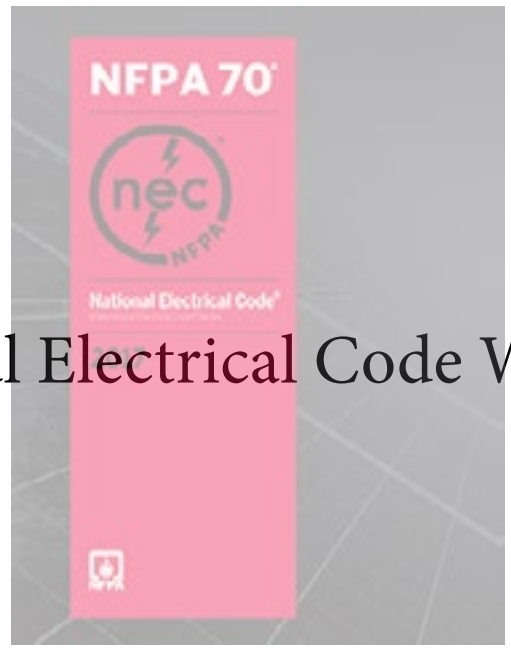
“Electronically Interactive Course”



National Electrical Code Workshop

This Course is a continuation of Introduction to the National Electrical Code and National Electrical Code for Maintenance Technicians, it ties together the code requirements and calculations need to verify and inspect entire electrical systems. This Workshop is an excellent review to take a state electrical license test.
This course is 50% Hand-On.
Each student will receive a current National Electrical Code book.

“We Bring the Factory into the Classroom”

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

Click Here For Onsite Quote

Code Classes

National Electrical Code Workshop

Course Topics and Objectives

Introduction to the code
What is Covered
Keywords
Use of Grounded Conductors
Branch Circuits
Feeders
Outside Branch Circuits
Grounding
Branch-Circuit Calculations
Overcurrent protection
Conductor ampacity
Conduit fill
Parallel conductors
Motor wire sizing
Motor overload sizing
Motor bank sizing

Purpose of the code
What is not covered
Definitions
Identification of Grounded Conductors
2-, 3-, and 4-wire circuits
Conduit types
Insulation Types

Feeder Calculations
Equipment ground sizing
Adjustment factors
Box fill
Sizing boxes
Motor overcurrent sizing
Motor disconnect sizing
Voltage drop calculations

Class Options:

2 Day Class
- Introduction to the National Electrical Code

3 Day Class
- National Electrical Code for Maintenance Technicians

5 Day Class – National Electrical Code Workshop
- Introduction to the National Electrical Code - 2 Days
- National Electrical Code for Maintenance Technicians - 3 Days

The 5 day workshop combines Introduction to the National Electrical Code and National Electrical Code for Maintenance Technicians to form a 5 day class.

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

SEMINAR FEE
$1100 2 Day Option
$1650 3 Day Option
$2750 5 Day Option

ONSITE TRAINING

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We can provide the same courses as we offer in public seminars. We can even design courses especially to meet your needs.

Advantages of On-Site Training
1. Modify the content to your specific needs
2. Protect company privacy
3. Workers remain on site in case of an emergency
4. Saves time and travel costs
5. Instructors can discuss your specifi c equipment
6. Problems can be openly discussed
7. Flexible scheduling
8. Increased price savings as the groups get larger
9. Promote teamwork & camaraderie among workers
10. More comfortable learning environment

Technical Training Classes
www.ttc.training

Code Classes

Code Classes

Training For Technicians....By Technicians

"Electronically Interactive Course"

Grounding and Bonding for Maintenance Technicians

Grounding and Bonding for Maintenance Technicians is designed to teach the student how to follow the proper procedures that a contractor or electrical worker would employ during the grounding and bonding system process. Traditional topics, such as service, feeder, and branch circuit grounding and bonding are covered in great detail. Real-world applications such as grounding and bonding in health care facilities, hazardous locations, and lightning protection are used as examples to enhance comprehension.

Each student will receive a college level textbook.

"We Bring the Factory into the Classroom"

Check our online schedule for classes near you

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This seminar can also be presented at your location

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Grounding and Bonding for Maintenance Technicians

Course Topics and Objectives

- Circuit Basics and Overcurrent Protection
- Using the National Electrical Code®
- Grounding Electrodes and the Grounding
- Electrode System
- Requirements for Grounding Conductors at Services
- Grounding Electrode Conductors
- Bonding Requirements
- Equipment Grounding Conductors
- Grounding Electrical Equipment
- Isolated/Insulated Grounding Circuits and Receptacles
- Grounding at Separate Buildings or Structures
- Grounding Electrical Systems
- Grounding and Bonding for Separately
- Derived Systems
- Special Occupancies and Conditions
- Grounding for Special Equipment
- Grounding and Bonding for Limited-Energy Systems
- Ground-Fault Circuit Interrupters and Equipment
- Ground-Fault Protection
- Grounding Rules for Medium- and High-Voltage Systems

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4:30 pm Class Ends

SEMINAR FEE
$1100 2 Days

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Code Classes

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Training For Technicians....By Technicians

"Electronically Interactive Course"

Significant Changes to the NEC®

The National Electrical Code (NEC®) is the most widely recognized and accepted electrical standard in the world. Every three years, the NEC®is updated to reflect the newest installation practices utilized by the electrical industry. Significant Changes to the 2017 NEC® is an invaluable class for electricians, electrical contractors, electrical inspectors, and electrical engineers, focusing on the most important changes that occurred between the 2014 and 2017 NEC®. To assist and enhance understanding of each revision, the class is arranged to follow the general layout of the NEC® and each change is accompanied by a helpful image or illustration. In addition, background information and a discussion on the significance of the change accompany each of the revisions. The comprehensive coverage offered in this class enables students to gain a solid understanding and application of the requirements contained in the 2017 NEC®.

Each student will receive a college level textbook.

"We Bring the Factory into the Classroom"

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Significant Changes to the NEC®

Course Topics

- Articles 90, 100, and 110 - Introduction, Definitions, and Requirements for Electrical Installations
- Articles 200-285 - Wiring and Protection
- Articles 300-399 - Wiring Methods and Materials
- Articles 400-499 - Equipment for General Use
- Articles 500-590 - Special Occupancies
- Articles 600-695 - Special Equipment
- Articles 700-770 - Special Conditions
- Articles 800-840 - Communications Systems

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4:30 pm Class Ends

SEMINAR FEE
$1100 2 Days

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Code Classes

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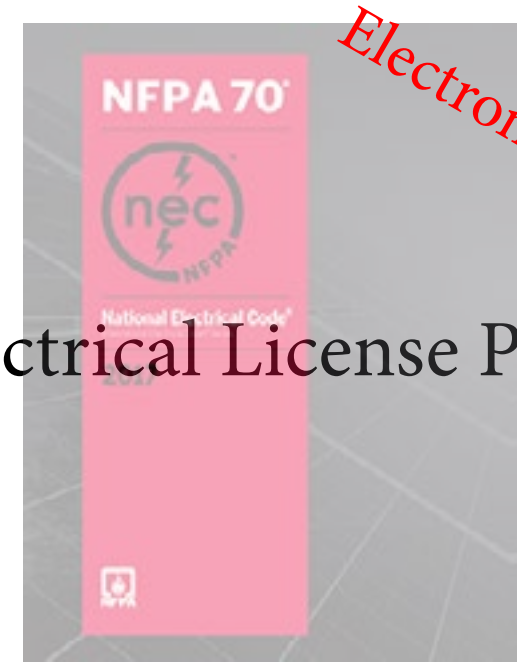
Code Classes

Training For Technicians....By Technicians



Electronically Interactive Class

Electrical License Prep

This class will give you the knowledge and confidence to achieve a passing score on the difficult Journeyman or Master Electrical Licensing Exam

States use various testing agencies, we will prepare you for the most used, Prometric,Pearson Vue, GITS, AMP, ProV exam, PSI, NAI National Assessment Institute exam, ICC, and any city, county, or State electrical exam.

Participants will receive:
National Electrical Code -Softback Code book Hi-Lited with over 3,600 references
Formula Inserts
Code Book Tabs installed
Workbook (or workbooks), highlighter, pencil, calculator..basically everything you need for the class will be provided..
Nearly $400 in supplies

Actual exam questions and calculations will be worked in class.

This is a 40 hour class.....
From state to state the test can vary, thats why we do not seperate Journeyman and Masters class. This is a total class.

Check our online schedule for classes near you

Click Here For Our Schedule

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Technical Training Classes
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Electrical License Prep

Who Should take this course:

Anyone preparing to take the state electrical licensing test.

Course Topics

Ohm's Law	Voltage Drop
Ampacity Corrections	Box Conduit Sizing
Motor Circuit Sizing	Cooking Equipment Demands
Neutral Sizing	Motor Controls
Transformer Calculations	Theory
Real Test Practice	Online Practice Exams

Test taking strategy, finding the key words quickly, series & parallel resistances, voltage drop, conductor ampacity, motor calculations, conduit & box fill, cooking equipment demands, service sizing dwellings and commercial, single phase transformers, three phase transformer calculations and more.....

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
5:00 pm Class Ends

SEMINAR FEE
$2750 5 Day

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Code Classes

PLC Skills

Training For Technicians....By Technicians

"We Bring the Factory into the Classroom"

Experience Real hands-on PLCs

RSLogix500 w/Real PLCs

Troubleshooting PLC Control Systems for Maintenance Technicians - RSLogix 500

and the PLC Professor

The curriculum is designed for electricians, technicians and engineers that have little or no experience with programmable logic controllers. It is also suitable for technical personnel with experience using controllers other than Allen Bradley, as well as those that need a refresher on PLCs. The course starts at the most fundamental level and progresses with each additional day.

Each student will receive a college level PLC Professor Lab Manual.

Check our online schedule for classes near you

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Technical Training Classes
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Troubleshooting PLC Control Systems for Maintenance Technicians - RSLogix 500

Course Topics

- Basic Electricity
- Voltage Types and Levels used in Industrial Control Systems
- Power Distribution in Industrial Control Systems
- Basic Control Circuits
- Hands-On experience with simple industrial control circuits
- Using Laptop and Desktop Computers to Troubleshoot Industrial Control Systems
- Basic Digital Multi-meter use in Troubleshooting Industrial Control Systems
- The Industrial Control System without a Programmable Logic Controller
- Machine and Process Control Elements, the “controlled” objects
- Hands-On experience with more complex industrial control circuits
- Detailed demonstration of RSLogix
- Relay Coils vs. Bits of Memory
- Understanding Number Systems when troubleshooting Industrial control systems
- Interpreting Controller Memory structure for troubleshooting purposes
- Hands-On experience configuring and maintaining communications with RSLinx
- Hands-On experience with PLC Program file, archived, offline and online with the controller
- Hands-On experience with basic rungs of logic
- Understanding the relationship between input field devices and the controller’s logic
- Hands-On experience troubleshooting the One Shot instruction in control logic
- Understanding computers used to control industrial processes
- Detailed demonstration of online editing of PLC programs with RSLogix
- Hands-On experience with PLC programs that use the timer instructions
- Removing, relocating, replacing and adding PLC hardware
- Hands-On experience with PLC programs that use the counter instructions
- Detailed demonstration of the controller’s modes of operation
- Hands-On experience dealing with file instructions encountered in the process of troubleshooting PLC programs
- Hands-On experience interpreting Masked Results and Comparison instructions in the course of troubleshooting PLC programs
- Hands-On experience with math instructions encountered when troubleshooting PLC programs
- Hands-On experience with Move and Logical instructions encountered when troubleshooting PLC programs
- Hands-On experience with file shift and bit shift instructions encountered in the course of troubleshooting PLC programs
- Hands-On experience with common sequential logic encountered when troubleshooting PLC programs
- Interpreting High Speed Counter instructions in ladder logic diagrams
- Detailed discussion of the message instruction
- Final wrap-up

SEMINAR FEE
$2200 4 Day Option
$2750 5 Day Option

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

Class Options:

3 Day Class -
- Troubleshooting PLC Control Systems for Maintenance Technicians - RSLogix 500 - M-R

5 Day Class -
- Troubleshooting PLC Control Systems for Maintenance Technicians - RSLogix 500 - M-W
- VFD/PLC Intergration - RsLogix 500 - R-F

Notes:::
VFD/PLC Intergration - RsLogix 500 is NOT a stand alone class. Must be taken with the 5 day option.

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PLC Skills

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"We Bring the Factory into the Classroom"

VFD/PLC Intergration - RsLogix 500

This class is degigned to teach students VFD/PLC intergration. They will learn about ethernet communications with drives, software applications with drives and troubleshooting drives with software.

Each student will receive a college level PLC Professor Lab Manual.

Check our online schedule for classes near you

Click Here For Our Schedule

This seminar can also be presented at your location

Click Here For Onsite Quote

VFD/PLC Intergration - RsLogix 500

Course Topics

- VFD/PLC Motor Control Circuit
- VFD/PLC Discrete I/O
- VFD/PLC Ethernet Communication
- VFD/PLC Programming
- VFD/PLC Troubleshooting
- VFD/PLC Software configurations

SEMINAR FEE
$2200 4 Day Option
$2750 5 Day Option

SEMINAR AGENDA
7:30 am Registration
8:00 am Class Begins
12:00 -1:00 pm Lunch (on your own)
4:30 pm Class Ends

Class Options:

3 Day Class -
- Troubleshooting PLC Control Systems for Maintenance Technicians - RSLogix 500 - M-R

5 Day Class -
- Troubleshooting PLC Control Systems for Maintenance Technicians - RSLogix 500 - M-W
- VFD/PLC Intergration - RsLogix 500 - R-F

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PLC Skills

PLC Skills

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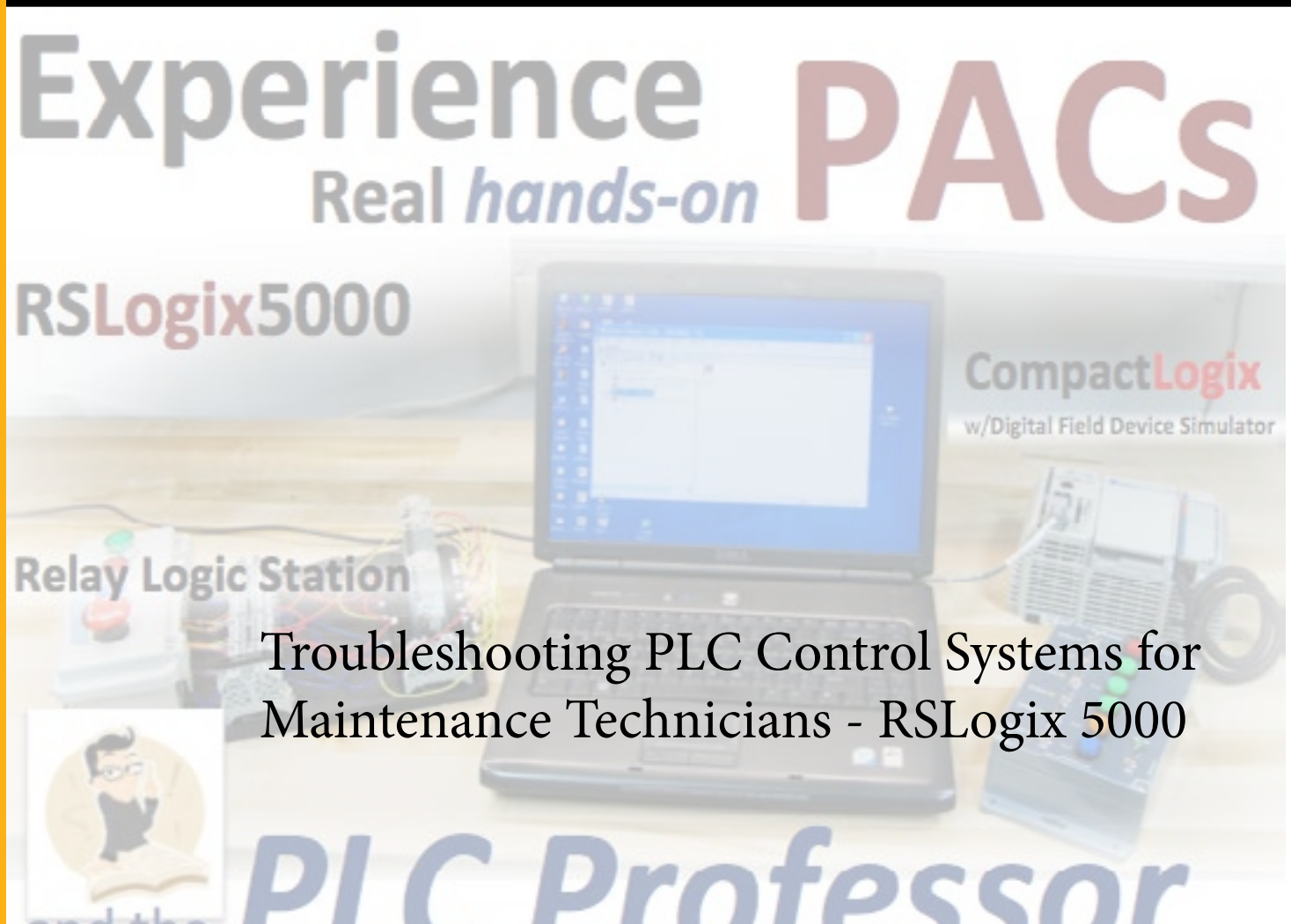

Troubleshooting PLC Control Systems for Maintenance Technicians - RSLogix 5000

The curriculum is designed for electricians, technicians and engineers that have little or no experience with programmable logic controllers. It is also suitable for technical personnel with experience using controllers other than Allen Bradley, as well as those that have experience with RSLogix500 controllers. The course starts at the most fundamental level and progresses with each additional day.

Each student will receive a college level PLC Professor Lab Manual.

Check our online schedule for classes near you

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This seminar can also be presented at your location

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Troubleshooting PLC Control Systems for Maintenance Technicians - RSLogix 5000

Course Topics

- Quick review of Basic Electricity
- Voltage Types, Levels and Distribution in Industrial Control Systems
- Basic Control Circuits
- Understanding Industrial Control Electrical Drawing Sets
- Hands-On experience with simple industrial control circuits
- Using Laptop and Desktop Computers to Troubleshoot Industrial Control Systems
- Basic Digital Multi-meter use in Troubleshooting Industrial Control Systems
- The Industrial Control System without a Programmable Logic Controller
- Machine and Process Control Elements, the “controlled” objects
- Fundamentals of Industrial Controllers
- Hands-On experience and discussion with complex industrial control circuits
- Hands-On experience configuring and maintaining communications with RSLinx
- Detailed demonstration of RSLogix5000
- Understanding Number Systems when troubleshooting Industrial control systems
- Interpreting Controller Memory structure for troubleshooting purposes
- Hands-On experience with PAC Program file, archived, offline and online with the controller
- Hands-On experience with basic rungs of logic
- Understanding the relationship between input field devices and the controller’s logic
- Hands-On experience troubleshooting the One Shot instruction in control logic
- Understanding Number Systems when troubleshooting Industrial control systems
- Interpreting Controller Memory structure for troubleshooting purposes
- Understanding computers used to control industrial processes
- Detailed demonstration of online editing of PAC programs with RSLogix5000
- Hands-On experience with PAC programs that use the timer instructions
- Removing, relocating, replacing and adding PAC hardware
- Hands-On experience with PAC programs that use the counter instructions
- Detailed demonstration of the controller’s modes of operation
- Demonstration with file instructions encountered in the process of troubleshooting PAC programs
- Demonstration of searching PAC programs with RSLogix5000, cross referencing and replacing
- Hands-On experience interpreting Comparison instructions when troubleshooting PAC programs
- Hands-On experience with math instructions encountered when troubleshooting PAC programs
- Hands-On experience with Move and Logical instructions encountered when troubleshooting PAC programs
- Demonstration with file shift and bit shift instructions encountered in the course of troubleshooting PAC programs
- Hands-On experience with common sequential logic encountered when troubleshooting PAC programs
- Detailed discussion of the message instruction
- Final wrap-up

SEMINAR FEE
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$2750 5 Day Option

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Class Options:

3 Day Class -
- Troubleshooting PLC Control Systems for Maintenance Technicians - RSLogix 5000 - M-R

5 Day Class -
- Troubleshooting PLC Control Systems for Maintenance Technicians - RSLogix 5000 - M-W
- VFD/PLC Intergration - RsLogix 5000 - R-F

Notes:::
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VFD/PLC Intergration - RsLogix 500

Course Topics

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- VFD/PLC Discrete I/O
- VFD/PLC Ethernet Communication
- VFD/PLC Programming
- VFD/PLC Troubleshooting
- VFD/PLC Software configurations

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