



MAINTENANCE TROUBLESHOOTING INTERNATIONAL LLC

BIE-202

Hands-On Training Center: 2860 Ogletown Road, Newark, DE 19711
 Corporate Offices & Mailing Address: 2917 Cheshire Road Wilmington, DE 19810
 Phone/TXT: 302.593.2698 (Frank) Email: Frank@mttroubleshooting.com
 Website: www.mtroubleshooting.com

BIE-202 BASIC INDUSTRIAL ELECTRICITY FOR THE MULTI-CRAFTSMAN

Finally a course that is badly needed. More and more maintenance departments are becoming multi-craft and technicians need to learn more about the electrical end of keeping a facility running. In this course you will learn how power gets to your facility, how transformers work, how to read a meter, how to check out a circuit, how to troubleshoot a motor, how to disconnect and reconnect a motor properly, and what to do when an overload trips. The attendee should be able to safely perform tests and checks on electrical systems and troubleshoot basic electrical problems. Very big emphasis on safety and learning not to be afraid of electricity but learn the right way to handle electrical problems. Each trainee will be provided a table top circuit board and learn how a relay, motor, motor circuit, lighting, and other electrical devices work and how to troubleshoot problems. Craftsmen will be better equipped to describe electrical problems to a certified electrician and be able to better provide assistance to cut the time of electrical repair. This course is not intended to make a craftsmen into an electrician, but rather to allow the craftsmen a basic understanding of the electrical aspects of common machinery and recognize if a problem is truly mechanical or electrical in nature.



BASIC ELECTRICITY

- Voltage, current and resistance;
- Ohms Law
- Series circuits - Parallel circuits
- Series parallel circuits
- AC and DC in plants
- Workplace electrical safety

ELECTRICAL TEST EQUIPMENT

- Multi meters
- How to use a voltage testers
- How to use a clamp-on ammeter
- Using a megohmmeter

ELECTRICAL WORKPLACE SAFETY

- OSHA and NFPA 70E
- Lock out tag out (LOTO)
- Hazards and dangers of electricity
- Ground faults
- Personal protective equipment (PPE)

UNDERSTANDING THE PLANT ELECTRICAL SYSTEM

- Single line diagrams
- High voltage disconnects
- Transformers
- Facilities Distribution

- Fuses and Circuit breakers
- Feeders and Low Voltage Disconnects
- Panel boards and branch circuits
- Motor Circuits
- Lighting Circuits

NATIONAL ELECTRIC CODE

- Purpose and overview
- Definitions and terms

WIRE SELECTION

- Conductor, Insulation and Wire Size
- Race way - Conduit - Cable tray
- Fittings and boxes

INSTALLING AND WIRING EQUIPMENT

- Connectors — splicing — termination lugs
- Installing a branch circuit receptacle
- Installing a branch circuit-motor

BASIC TROUBLESHOOTING

- Understanding electrical symbols
- Troubleshooting branch circuits
- Troubleshooting motor circuits
- Checking and testing fuses and circuit breakers

SINGLE LINE DIAGRAMS

- Understanding a single line
- Examination of a complete plant single line diagram
- How a single line diagram is used for an arc flash study
- How a single line diagram is used for a relay coordination study.

ELECTRICAL MAINTENANCE

- Preventive maintenance (PM)
- Predictive maintenance (PdM)

CLASS FORMATS AVAILABLE

- MTI Hands-On Center \$995/person
 - ZOOM Interactive \$995/person
 - On-Site (Your Location) Ask for Quote
- Quick Quote Available in 48 hrs.

CLASS DURATION AND HANDS-ON

2-days, 15 hours of instruction
 45% to 50% hands-on activities
 Plenty of meter time

FREE BOOK ISSUED

Ugly's Electrical References
 (\$30 value)

Class Details: Each student will receive class books, work activity sheets, self-test progress evaluations, as well as questions from the instructor to make sure they understand the material presented. It is expected that an attendee will leave the class with the basic knowledge of the subject and possess new found skills to better equip them when they return to their job. A certificate suitable for framing will be issued to each attendee who successfully completes the course. Call, email or check the website for the next time this course is scheduled at the MTI training center or as a ZOOM interactive session. On-site sessions? Request a quick 48-hour turnaround quote. Revised: 12/21/2020