

Electricity for Mechanics

Description: This course is designed for the facilities that have maintenance personnel having to cover electrical problems as a second trade. The course is set up to take a Mechanical maintenance person and give him the training he needs to work safely around electricity. The course teaches the basis of Electrical systems so that the participant may troubleshoot electrical control devices, motors, basic switching, AC circuits, DC circuits and be effective in the use of a Multi meter. Voltage, Current, Resistance, Power and their formulas are covered in this course.

Outline: The course objectives are as follows:

- Discuss the relationship of Voltage, Current, Resistance and Power
- Develop and understanding of Ohm's law and the Power circle
- Identify fundamental electrical devices and their symbols
- AC circuits, DC circuits, switches, resistors, conductors, capacitors, coils
- Analog and Digital Multi Meters, Solenoid type voltage meters, Fuzzy Sticks
- Measure AC current with clamp on meters
- Test AC circuits for correct polarity and grounding
- Compare resistance measured using an Ohmmeter to listed values on Resistors and Devices
- Troubleshoot control circuits using Ladder Diagrams to identify open fuses, defective switches, relays, etc.
- Describe the characteristics of Capacitance and Inductance
- Explain Transformer characteristics and operation and how to connect single and three phase AC transformers
- Describe the difference between DC motors and AC motors and identify 3 phase motor coil leads
- Demonstrate how to properly connect / disconnect a motor

Prerequisites: There are no prerequisites for this course other than an open mind and a willingness to participate in a learning environment. This course is recommended to all mechanical based tradesmen.

Course Length: This course is a 24 hour course.

Performance Objectives: The successful completion of this course should enable the participant to work safely and effectively around electrical devices. The successful participant will be able to troubleshoot and locate faults in electrical controls. The course will have prepared the participant to solve many of the day to day electrical problems associated with running manufacturing equipment.