



AUTOMATION | ELECTRICAL
DATA COMM & SECURITY
INDUSTRIAL & SAFETY
FLUID POWER

AUTOMATION

TUE. NOV. 7
8 AM - 5 PM

SMC CAPE GIRARDEAU
2333 RUSMAR ST.
CAPE GIRARDEAU, MO
63703

COURSE NUMBER MFG244

BASICS OF ELECTRICITY

TRAINING EVENT

This course is designed for all personnel who need knowledge of basic electricity. Basic electricity theory is explored, identifying component operations in energized and de-energized states. This course includes safety fundamentals and safe operation awareness.

During this course, participants will have opportunities to complete paper exercises proving theory and relationship to electrical devices. These paper exercises will aid understanding of the major topics learned. The major topical fundamentals assist with the importance of the NEC and its role in the industry, identifying AC and DC, electrical power and measurement; and safety applied to energizing and de-energizing circuits. All technology is provided for student use in the classroom by Rockwell Automation. It is not necessary for students to bring any technology with them when attending this course.

+ HANDS-ON

Throughout this course, you will have the opportunity to practice the skills you have learned through a variety of hands-on exercises.

COST

\$830

REGISTER

To register, contact Erica Masterson at emasterson@smcelectric.com by Tuesday, October 17.

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At the completion of this course, participants will:

- Learn and understand fundamental electrical concepts and terms
- Learn and understand about sources of electricity; how it's produced and distributed
- Learn and understand variations of wiring devices
- Learn and understand input devices, sensors and switches; identifying normally open and normally closed states
- Learn and understand output devices
- Learn and understand multi-meter use
- Learn and understand safety fundamentals around electricity

SCHEDULE

Fundamental Concepts and Terms

- Atoms, Charge, Valence Electrons
- What is Electrical Current
- Voltage, Resistance/Impedance
- Ohm's & Kirchoff's laws
- Conductors, Insulators
- Semi-Conductors

Sources of Electricity

- DC & AC Electricity
- AC Power Generations & Distribution
- Electrical Power Consumption Costs
- Transformers & Power Supplies

Wiring Devices

- Switches
- Terminal Strips
- Connectors
- Circuit Breakers
- Fuses
- GFCIs

Input Devices

- Sensors
- Switches
- Mechanical Operators
- Electronic Operators

Output Devices

- Lamps, Pilot Lights
- Solenoids
- Electromechanical Relays
- Electric Motors
- Disconnect Devices

Use of Multimeter

Arc Flash Hazards

Government Regulations

- OSHA
- NEC

Personal Protective Equipment