

# NFPA® 70E – 2021 Electrical Safety

2 Days, 1.4 CEUs

The NFPA® 70E Standard for Electrical Safety in the Workplace has been updated for 2021. This updated standard contains significant changes when compared to the 2018 version. The course covers the requirements for working safely in the electrical environment based on the NFPA® 70E. Understanding this standard is imperative for compliance with the OSHA® mandates regarding electrical safety in the workplace. OSHA® specifically mandates employer assessment of generally recognized hazards in the workplace, and provisions for protecting the employee from those hazards.

The NFPA® 70E is updated to reflect ongoing research to improve electrical safe work practices and PPE. OSHA® compliance and a safe workplace are the desired outcomes. NFPA® 70E provides the directions on how to achieve that outcome. Fewer electrical accidents are in everyone's best interest.

This two-day course is intended for any qualified personnel who work on or around AC or DC voltages of 50 volts or more, or that are responsible for safety in the workplace. Personnel in any industry where the hazards of electricity are a reality will benefit from this knowledge. This course assists in meeting the mandated training requirements of OSHA® 1910.332. Participants will receive the 2021 edition of the NFPA® 70E.

## Lab and Classroom Attire

AVO is committed to the personal safety of each participant and requires long pants and ANSI rated "safety toe" work shoes for class and lab activities. Lecture courses may involve a tour of a work or shop area and for this reason open toe shoes and shorts are not considered appropriate attire for the classroom.

## Learning Objectives

To receive 1.4 CEUs, participants must attend 2 days of class (14 contact hours) and attain a minimum grade of 80% on the final exam. Upon completion of this course, the participant will demonstrate that he/she is able to:

- Outline the arrangement of the material in the NFPA® 70E.
- Explain the hazards of electrical work and their effects on the employee.
- Summarize the requirements for establishing an electrically safe work condition.
- Establish the requirements for a shock risk and arc flash assessment.
- Implement approach boundaries for shock protection and arc flash hazard for qualified and unqualified employees.
- Select personal protective equipment for shock and arc flash protection.
- Practice safe work practices if an arc flash hazard is present.

## SCOPE

### Day 1\* (7 contact hours)

- I. Introduction - Electrical Safety
- II. Article 90 & Chapter 1, Article 100
  - A. Article 90, NFPA® 70E Introduction
  - B. Article 100, Definitions
- III. Chapter 1, Article 105
  - A. Recognized Hazards of Electrical Work
  - B. Responsibilities of Employers and Employees

- IV. Chapter 1, Article 110
  - A. Electrical Safe Work Condition
  - B. Energized Work
  - C. Electrical Safety Program
  - D. Training Requirements
  - E. Host/Contractor Responsibilities
  - F. Test Instruments and Equipment
  - G. Portable Cord- and Plug-Connected Electric Equipment

- H. Ground-Fault Circuit-Interrupter (GFCI) Protection
- I. Overcurrent Protection Modification
- J. Equipment Use
- V. Chapter 1, Article 120 (1.5 hrs)
  - A. LOTO Program
  - B. LOTO Principles
  - C. LOTO Equipment
  - D. LOTO Procedure
  - E. LOTO Process

\*Class scheduling times may vary based on discussions and size of class

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## SCOPE (continued)

### Day 2 (7 contact hours)

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| <ul style="list-style-type: none"><li>VI. Chapter 1, Article 130<ul style="list-style-type: none"><li>A. Work Involving Electrical Hazards</li><li>B. Energized Electrical Work Permit</li><li>C. Electrical Shock Risk Assessment</li><li>D. Arc Flash Risk Assessment</li><li>E. Personal and Other Protective Equipment</li><li>F. Other Precautions for Personnel Activities</li><li>G. Overhead Lines</li><li>H. Underground Electrical Lines and Equipment</li><li>I. Cutting or Drilling</li></ul></li></ul> | <ul style="list-style-type: none"><li>VII. Chapter 2 Safety-Related Maintenance Requirements<ul style="list-style-type: none"><li>A. Introduction</li><li>B. General Maintenance Requirements</li><li>C. Substations, Switchgear, etc.</li><li>D. Premises Wiring</li><li>E. Controller Equipment</li><li>F. Fuses and Circuit Breakers</li><li>G. Rotating Equipment</li><li>H. Hazardous Locations</li><li>I. Batteries and Battery Room</li><li>J. Portable Electric Tools and Equipment</li><li>K. Personnel Safety and Protective Equipment</li></ul></li></ul> | <ul style="list-style-type: none"><li>VIII. Chapter 3 Safety Requirements for Special Equipment<ul style="list-style-type: none"><li>A. Introduction</li><li>B. Safety Related Work Practices for:<ul style="list-style-type: none"><li>Electrolytic Cells</li><li>Batteries and Battery Rooms</li><li>Lasers</li><li>Power Electronic Equipment</li><li>R&amp;D Labs</li><li>Capacitors</li></ul></li></ul></li><li>IX. Overview of Informative Annexes</li><li>X. Conclusion<ul style="list-style-type: none"><li>A. Review</li><li>B. Final Exam</li></ul></li></ul> |
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# STANDARD EQUIPMENT LIST

## NFPA 70E® - ELECTRICAL SAFETY

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REVISED AUGUST 2, 2020 BY: C. HELMICK  
COURSE NUMBER 431-2021  
2 DAY

### **TEXT**

1 / STUDENT

NFPA 70E® 2021 *STANDARD FOR  
ELECTRICAL SAFETY IN THE WORKPLACE®*

1 / STUDENT

STUDENT PACKET

### **EQUIPMENT**

1 / CLASS

CHICKENSWITCH