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| **Course Name** | Electrical Safety (NFPA 70E 2024) Part 1 |
| **Credit Hours** | 4 Hours |
| **Instructor(s)** | Jerry Durham |
| **Fee** | $55.00 |
| **Reference Materials** | NFPA 70E Standard for Electrical Safety in the Workplace 2024 Edition |

**Course Description**

A comprehensive guide to understanding the first half of the 2024 NFPA 70E Standard for Electrical Safety in the Workplace electrical safety rules and requirements. The 2024 NFPA 70E publication and this course are consistent with NFPA requirements from the 2023 NFPA 70 National Electrical Code (NEC). This course introduces users to the arrangement of NFPA 70E and the scope of its articles promoting safe work practices for employees working around electricity in the capacity of general electrical equipment installation and service, electrical equipment maintenance, and work on electrical equipment deemed Special Equipment by NFPA 70E.

**Learning Outcomes**

At completion of this course, licensees can expect to be able to:

- Describe the purpose, scope, and arrangement of the 2024 NFPA 70E.
- Understand how the 2024 NFPA 70E Standard applies to general electrical installations, electrical maintenance, and work on special electrical equipment.
- Explain the difference between mandatory rules, permissive rules, and explanatory materials in 70E.
- Describe terms and definitions specific to the NFPA 70 Standard.
- Understand the need and process for establishing electrically safe work conditions around equipment.
- Be familiar with an electrical safety program (ESP)
- Understand host employer and contract employer responsibilities for maintaining electrical safety on the job site.
- Understand risk assessment and its value for promoting safety on the job site.
- Execute safe handling, storage, and grounding of portable electrical tools.
- Be familiar with the types of maintenance necessary for fuses, circuit breakers, and their associated parts.
- Understand ground-fault protection for electrical tools and equipment.
- Understand lockout/tagout (LOTO) as a safety protocol.

- Understand that both simple and complex procedures are recognized by NFPA 70E for LOTO.
- Explain that special electrical equipment is recognized and covered by NFPA 70E and that electrical equipment deemed special by NFPA 70E has dedicated NFPA 70E requirements for worker's safety.
- Explain an arc-flash event while being familiar with hazards to human life resulting from a lack of proper PPE on the job.
- Understand the types of personal protective equipment (PPE) and that maintenance or inspection of PPE is required at regular intervals.

**Equipment Requirements**

You must have an active, working internet connection to access this course online, as well as a platform to access the internet, such as a computer, tablet, or phone. All popular web browsers are supported, including Google Chrome, Mozilla Firefox, Safari, and Opera. No specialized software, speaker, microphone, or web camera is required.

**Schedule and Location**

This course is available online at any time at www.JadeLearning.com. Upon enrolling in the course, students will have access until the agency issued course expiration date. After the access expiration date, the course will be removed from the student's account and any progress in the course will be lost. Before the access expiration date, the student may sign in and out of the course as many times as needed to complete the course.

**Student Support**

Both general and technical support is available to the student before, during, and after taking the course online. Students have access to general customer support via phone, chat, and email. Students have access to the course instructor via a contact form in the course and email. All questions, concerns, and comments received will be responded to within one business day.

**Participation/Interactivity Verification**

Inactivity Timer - Students are automatically logged out of the training after 30 minutes if the system does not sense interactivity (e.g., a mouse click or typing).

Timed Logs - Per our company's record retention policy, each student's every log-in, log-out, and lesson/assessment completion time is tracked and retained as part of the student record.

Assessment - At least one content question is delivered at the bottom of each page of text and the section is not considered complete until the related question has been answered. The licensee must complete all 50 multiple-choice questions with a score of at least 70% in order to get credit for the course. Question choices are randomized so each participant will have a unique testing experience. This course is set up to allow users to go back through the section questions and re-answer questions while they meet the time requirement.

Global Timer - Students will not get credit until they spend a minimum of 200 active minutes total in the course.

**Identity Verification**

Unique Username/Password - Each student that wants to complete a training course with us must create and account by registering a unique personal email address and password. The student must enter this unique identifier every time they want to access the course after logging out or being logged out.

**Regulatory Auditor Access**

To review and audit this course, please go to www.JadeLearning.com. Click on the Login button on the top right and sign into the learning system using the login information below.

Username: UTEtester
Password: UTEtester

# Electrical Safety (NFPA 70E 2024) Part 1 Timed Outline

| Section | Title | Questions | Minutes* |
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| 1 | **NFPA 70E-2024 Sections 90.1, 90.2, 90.3**<br>Introduce workers to the NFPA 70E Standard for Electrical Safety in the Workplace. Discuss the purpose of the 70E Standard, and who and what is covered by the Standard. | 2 | 6 |
| 2 | **NFPA 70E-2024 Sections 90.4, 90.5, 90.6**<br>Review the arrangement of the NFPA 70E Standard and the purpose of the informative annexes. Examine mandatory versus permissive rules, explanatory materials, and the standards for formally interpreting the NFPA 70E Standard. | 2 | 6 |
| 3 | **NFPA 70E-2024 Article 100**<br>Introduce workers to NFPA 70E terms and definitions to establish consistency across 70E Articles. Article 100 definitions allow for the uniform application of requirements from the 70E Standard. | 2 | 4 |
| 4 | **NFPA 70E-2024 Section 105.3**<br>Examining the employer and employee responsibilities for maintaining a safe job site. Learning how to apply safety-related work practices and procedures, and who is considered a qualified person on the job. | 2 | 5 |
| 5 | **NFPA 70E-2024 Section 110.1, 110.2**<br>Review general requirements as they apply to electrical safety-related work practices and introduce workers to the requirements for establishing an electrically safe work condition. | 2 | 5 |
| 6 | **NFPA 70E-2024 Sections 110.3**<br>Outline the employer's responsibility to implement an electrical safety program (ESP) for the protection of employees. The ESP includes procedures for risk assessment and directs employees to work safely around electrical hazards on the job. The ESP promotes understanding of the NFPA Hierarchy of Risk Control Methods—always preferring to eliminate risk over safeguarding against it. | 2 | 8 |
| 7 | **NFPA 70E-2024 Section 110.4**<br>Understanding NFPA 70E training requirements for employees on a job site. Looking at training requirements that apply to all employees exposed to electrical hazards on the job when the risk hazard cannot be effectively reduced to a safe level. Types of training including lockout/tagout training and emergency response training. | 2 | 7 |
| 8 | **NFPA 70E-2024 Section 110.5**<br>Addressing host employer and contract employer responsibilities for safety on the jobsite: Host employers must notify contract employers of all hazards on the job when they are covered in the NFPA 70E Standard and relate to the contract employer's work. | 2 | 5 |
| 9 | **NFPA 70E-2024 Section 110.6**<br>Learning testing and troubleshooting procedures performed by qualified persons. Instruments and equipment used for testing and troubleshooting electrical equipment. Visual inspections and repair of testing tools and equipment. | 2 | 4 |
| 10 | **NFPA 70E-2024 Section 110.7(A), 110.7(B)**<br>Addressing proper handling, storage, and grounding of portable cord-and-plug connected electric equipment, cord-and-plug connected test instruments, and electric cord sets (extension cords). | 2 | 7 |

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| **11** | **NFPA 70E-2024 Section 110.7 (C) — (F)**<br>Learning visual inspection and wet location safe-usage requirements for portable cord-and-plug connected electric equipment, cord-and-plug connected test instruments, and electric cord sets (extension cords). Understanding requirements for following manufacturers instructions. | **2** | **5** |
| **12** | **NFPA 70E-2024 Section 110.8**<br>What is Ground-Fault Circuit-Interruptor (GFCI) protection? Does GFCI protection differ from overcurrent protection and arc-fault protection? Discuss the operating principles of these protection devices. | **2** | **7** |
| **13** | **NFPA 70E-2024 Section 110.8, 110.9, 110.10**<br>Learning the proper application of Ground-Fault Circuit-Interrupter (GFCI) protection for employees. Rules against modifying overcurrent protection of circuits and conductors, including on a temporary basis. Using all equipment according to manufacturer's instructions. | **2** | **7** |
| **14** | **NFPA 70E-2024 Article 120**<br>Learning what it means to establish an electrically safe work condition and the danger of working on energized circuit conductors and parts? What are some measures that can be taken to be safe? | **2** | **5** |
| **15** | **NFPA 70E-2024 Section 120.2**<br>Learning requirements for in-house lockout/tagout programs applicable to employees on the job site. Learning employer responsibilities for establishing the lockout/tagout program, documenting the lockout/tagout program, and implementing the lockout/tagout program. | **2** | **2** |
| **16** | **NFPA 70E-2024 Section 120.3**<br>Understanding lockout/tagout principles, including: Employee involvement, proper procedures, control of energy, circuit interlocks, control devices, identification of locks and tags, and coordination of application. | **2** | **6** |
| **17** | **NFPA 70E-2024 Section 120.4**<br>Reviewing lockout/tagout equipment and requirements, such as equipment having to accept an isolation lockout/tagout device. A look at additional general requirements for lockout and tagout devices. | **2** | **6** |
| **18** | **NFPA 70E-2024 Section 120.5(A)(1)—(4) (Simple Procedure)**<br>Understanding lockout/tagout procedural planning, locating energy sources, identifying persons exposed to electrical hazards, identifying persons in charge, identifying when a simple lockout/tagout procedure can be applied, identifying control locations, de-energizing equipment (equipment shutdown), and releasing stored energy. Introduction to simple lockout/tagout procedure. | **2** | **4** |
| **19** | **NFPA 70E-2024 Section 120.5(A)(5) (Complex Procedure)**<br>Introduction to complex lockout/tagout procedure. Identifying when to apply complex lockout/tagout procedure. Complex procedure review, including fourteen elements of control, such as load shutdown, releasing stored energy, verifying and testing circuitry, grounding for safety, etc. | **2** | **9** |
| **20** | **NFPA 70E-2024 Section 120.6**<br>Learning the eight steps prescribed by NFPA 70E for establishing an electrically safe work condition. The NFPA requires these steps to be performed in order. | **2** | **5** |
| **21** | **NFPA 70E-2024 Article 130**<br>Reinforcing special 70E requirements concerning all work performed involving electrical hazards. Obtaining energized electrical work permits for electricians and maintenance personnel who must work on energized parts or equipment. Understanding electric shock risk assessment procedures for hazardous electrical work. | **2** | **6** |

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| **22** | **NFPA 70E-2024 Sections 130.5**<br>Learning about arc-flash hazards and performing arc-flash risk assessment. What is PPE? Arc-flash equipment warning labeling requirements for equipment that is likely to be serviced while energized. | **2** | **4** |
| **23** | **NFPA 70E-2024 Section 130.7(C)(1)—(8)**<br>Understanding PPE (Personal Protective Equipment) as an effective part of NFPA 70E Hierarchy of Risk Control Methods. Learning PPE general rules and care of equipment. Reviewing PPE components, including: Head area protection, eye protection, hearing protection, body protection, and hand, arm, and foot protection. | **2** | **6** |
| **24** | **NFPA 70E-2024 Section 130.7(C)(9)—(15)**<br>PPE (Personal Protective Equipment) such as arc-rated suits, hoods, face shields, and gloves. Understanding clothing material characteristics and types of clothing not permitted where PPE is required. | **2** | **9** |
| **25** | **NFPA 70E-2024 Section 130.7(C) Tables**<br>Table 130.7(C)(7)(a) for identifying glove and sleeve protection as PPE by its class designation. Table 130.7(C)(7)(b) for understanding maximum allowed testing intervals for rubber insulating equipment. | **2** | **6** |
| | **Totals:** | **50** | **240** |
| | **Time Required to Complete Course:** | | **200** |

*Just over one minute of time per question is included in the total to answer the questions.