

<b>Course Name</b>	Electrical Safety (NFPA 70E 2024) Part 2
<b>Credit Hours</b>	4 Hours
<b>Instructor(s)</b>	Jerry Durham
<b>Fee</b>	\$55.00
<b>Reference Materials</b>	NFPA 70E Standard for Electrical Safety in the Workplace 2024 Edition

### **Course Description**

A comprehensive guide to understanding the second 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:

- Understand the types of personal protective equipment (PPE) and that maintenance or inspection of PPE is required at regular intervals.
- Understand maintenance requirements for covers and their fasteners that protect workers from electrical wiring and parts.
- Understand maintenance requirements for rotating equipment, terminal boxes, terminal chambers, and enclosures.
- Be familiar with battery and battery room safety.
- Understand risk assessment and its value for promoting safety on the job site.
- 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.
- Be familiar with Informative Annex lists provided by NFPA 70E as helpful information but not as part of the NFPA 70E Standard.

### **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](http://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 an 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](http://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 2 Timed Outline

Section	Title	Questions	Minutes*
1	<p><b>NFPA 70E-2024 Section 130.7(D)</b></p> <p>Recognizing other types of protective equipment approved for working inside equipment restricted approach boundaries. Other types of protective equipment can include insulated tools, insulated equipment, and barriers installed around exposed, energized electrical conductors and circuit parts.</p>	2	5
2	<p><b>NFPA 70E-2024 Section 130.8 (A) - (D)</b></p> <p>Recognizing effective means of precaution on the job site other than PPE, such as staying alert, avoiding blind reaching into unfamiliar areas, the use of proper illumination, and wearing nonconductive clothing.</p>	2	4
3	<p><b>NFPA 70E-2024 Section 130.8(E)—(N)</b></p> <p>Recognizing even more effective means of precaution that can be utilized for safety on the job site, such as being aware of all conductive materials in contact with an employee's body, and exercising care in confined or enclosed spaces where electrical hazards exist. Precautions include controlling the movement of hinged doors and covers while working and keeping clear spaces free from tripping hazards and obstructions that block safe egress from working areas.</p>	2	4
4	<p><b>NFPA 70E-2024 Section 130.8(O)</b></p> <p>Utilizing safety signs and tags, barricades, and attendants to limit employee access to energized conductors and circuit parts on the job site.</p>	2	3
5	<p><b>NFPA 70E-2024 Section 130.9</b></p> <p>Exercising precaution when working within limited approach boundaries and arc-flash boundaries surrounding overhead electrical lines. De-energizing or guarding against making contact with overhead electrical lines. Approach distances surrounding overhead electrical lines for unqualified persons. Vehicular and mechanical equipment near overhead electrical lines. Underground electrical lines and cutting, drilling, removing, or rerouting these conductors.</p>	2	6
6	<p><b>NFPA 70E-2024 Chapter 2, Section 200.1</b></p> <p>Introduction to Chapter 2 as it applies to safety-related electrical maintenance requirements on the job site. Outlining what is considered maintenance by the NFPA 70E Standard.</p>	2	4
7	<p><b>NFPA 70E-2024 Article 205, Sections 205.2—205.11</b></p> <p>Recognizing a person qualified to perform maintenance. Adhering to manufacturers suggested maintenance for electrical equipment. Maintaining overcurrent devices and connections used for equipment grounding and bonding. Ensuring clear work spaces around equipment. Guarding of energized conductors and circuit parts. Maintaining indicators such as signs and equipment identification placards.</p>	2	5
8	<p><b>NFPA 70E-2024 Article 210</b></p> <p>Maintaining substations, switchgear assemblies, switchboards, panelboards, motor control centers, and disconnect switches. Maintaining electrical enclosures and area enclosures to reduce electrical hazards. Maintaining Maintaining conductors, conductor insulation, and their protective devices.</p>	2	5
9	<p><b>NFPA 70E-2024 Article 215</b></p> <p>Understanding maintenance requirements for covers and their fasteners that protect workers from electrical wiring and parts. Maintaining raceways and cable trays that provide protection for personnel from conductors, and grounding for some metal raceway.</p>	2	4

10	<b>NFPA 70E-2024 Article 220</b>  Addressing maintenance for controller equipment. Including any electrical equipment that governs the starting, stopping, direction of motion, acceleration, and speed of rotating equipment, or any other power utilization apparatus in the workplace.	2	5
11	<b>NFPA 70E-2024 Article 225</b>  Introduction to types of fuses and circuit breakers. Maintenance for fuses, fuse clips, and fuse holders. Molded-case circuit breaker maintenance, including case integrity, operating handles, and termination screws. Performing circuit breaker testing after electrical faults.	2	10
12	<b>NFPA 70E-2024 Article 230</b>  Maintenance requirements for rotating equipment, terminal boxes, terminal chambers, and enclosures. These parts must be maintained to guard against unintentional contact with exposed energized conductors and circuit parts and other electrical hazards.	2	4
13	<b>NFPA 70E-2024 Article 235</b>  Understanding hazardous (classified) locations and maintenance requirements for hazardous (classified) locations. Introduction to the 70E criteria for maintaining equipment and installations in hazardous locations.	2	4
14	<b>NFPA 70E-2024 Article 240</b>  Introduction to batteries and battery rooms and their required maintenance. Ventilation required around batteries. Required safety stations such as eye and body wash apparatus.	2	6
15	<b>NFPA 70E-2024 Article 245</b>  Maintaining portable electric tools and equipment per NFPA 70E. Maintenance extends to attachment plugs, receptacles, cover plates, and cord connectors for this equipment. All of these must be maintained according to the requirements found in Section 245.2 of the 70E Standard.	2	7
16	<b>NFPA 70E-2024 Article 250</b>  NFPA 70E requirements of maintenance for personal safety and protective equipment must be adhered to. Section 250.2 of the 70E Standard acknowledges no less than 14 equipment types that must be maintained in a safe working condition. Inspection and testing of protective equipment and protective tools must be regularly performed.	2	6
17	<b>NFPA 70E-2024 Chapter 3, Article 300</b>  Understanding Chapter 3 NFPA 70E rules to be aimed specifically at what the NFPA calls “special electrical equipment in the workplace.” Special electrical equipment has properties or attributes considered outside the scope of general requirements found in Chapter 1. Workers must know the NFPA 70E requirements for employers to provide safety-related work practices and employee training for any special electrical equipment in the workplace.	2	4
18	<b>NFPA 70E-2024 Article 310</b>  NFPA 70E Chapter 3 requires employees to be trained specifically for the electrical hazards associated with any work involving electrolytic cells. Employees must know that the 70E Standard requires employers to provide workers the appropriate safety-related work practices needed around electrolytic cells. Safety-related work practices include understanding hazards associated with the electrical energy from cells, and the required safeguarding of employees in the cell line working zone.	2	8
19	<b>NFPA 70E-2024 Article 320</b>  Introduction to Article 320 battery and battery room safety requirements that apply only to batteries and battery rooms considered to be special equipment.	2	9

20	<b>NFPA 70E-2024 Article 330</b> Requirements for employers to provide safety-related work practice training for employees working around lasers. Identifying different types of lasers and their risk hazard to workers. The applications for different types of lasers. Guarding against lasers and the required warning signs and labels for lasers and their systems.	2	9
21	<b>NFPA 70E-2024 Article 340</b> Article 340 safety-related work practice training for power electronic equipment such as electric arc welders, high-power radio and radar, RF induction heaters, motor drives, lighting controllers and similar equipment.	2	6
22	<b>NFPA 70E-2024 Article 350</b> Safety-related work requirements for research and development (R&D) laboratories. Identifying specific measures and controls for personnel safety in R&D laboratories. Personnel protection for the safeguarding of employees while exposed to electrical hazards associated with research and development laboratories.	2	10
23	<b>NFPA 70E-2024 Article 360</b> Capacitor safety requirements for work performed with and around capacitors. Learning the risk hazard of stored energy in capacitors and the NFPA 70E hazard thresholds assigned to capacitors. Introduction to procedures for performing risk assessment for work around capacitors. Establishing electrically safe working conditions around capacitors.	2	14
24	<b>NFPA 70E-2024 Information Annex A-I</b> A look at the 70E Informative Annexes and their included additional publications. Limits of approach around energized areas of work. Incident energy and the arc flash boundary calculation methods. Typical electrical safety program guidelines, Risk assessment and risk control principles. Sample lockout/tagout programs. PPE selection. And job briefing and safety checklist samples.	2	10
25	<b>NFPA 70E-2024 Information Annex J-S</b> Reviewing remaining 70E Informative Annex sections, including sample energized electrical work permits. Categories of 70E recognized electrical hazards. The application of safeguards in a cell line working zone. Understanding layering PPE for added protection and the total system arc rating. Examples of procedures and policies for working near overhead electrical lines. General design with safety in mind. Human performance when it comes to workplace electrical safety. And suggestions for safely working with capacitors.	2	13
<b>Totals:</b>		<b>50</b>	<b>242</b>
<b>Time Required to Complete Course:</b>			<b>200</b>

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