

2021 NFPA 70E

I. Course Description

- A. The following course is designed around the 2021 NFPA 70E.
- B. Info – The author of this course has added extra info that will be available for each topic covered, the info will expand on selected topics. In addition, the author has also provided some illustrations to help provide a better understanding of selected topics.
- C. This course was designed to give a better understanding to the end-user on the 2021 NFPA 70E

II. Learning Objectives

- 1) 90.2(A) Scope...Covered
- 2) 90.2(B) Scope...Not Covered
- 3) 90.4 Mandatory/Permissive Rules
- 4) Definitions...Arc Flash Hazard
- 5) Definitions...Arc Rating
- 6) Definitions...Boundary, Arc Flash
- 7) Definitions...Boundary, Limited Approach
- 8) Definitions...Boundary, Restricted Approach
- 9) Definitions...Electrical Safety Program
- 10) Definitions...Electrically Safe Work Condition
- 11) Definitions...Available Fault Current
- 12) Definitions...Incident Energy/Analysis
- 13) Definition...Risk Assessment
- 14) Definition...Step/Touch Potential
- 15) Definition...Qualified/Unqualified Person
- 16) Definition...Working On (energized elec. Parts)
- 17) 105.3 Responsibility/Employer/Employee
- 18) 110.3 Electrically Safe Work Condition
- 19) 110.4 Energized Work/ Additional Hazards
- 20) 110.4 Energized Work/ Infeasibility
- 21) 110.4 Energized Work/ Less than 50 Volts
- 22) 110.4(D) Normal Operating Conditions
- 23) 110.5 Electrical Safety Program/ Awareness...
- 24) 110.5(H) Risk Assessment Procedure/Elements/Human Error

- 25) 110.5(H) Risk Assessment/ Hierarchy of Risk Control Methods
- 26) 110.5(I) Job Safety Planning/Briefing/Change in Scope
- 27) 110.5(M) Auditing
- 28) 110.6(A) Electrical Safety Training/ Qualified Person
- 29) 110.6(A) Electrical Safety Training/ Unqualified Person
- 30) 110.6(A) Electrical Safety Training/ Additional & Retraining
- 31) 110.6(B) LOTO Training/ Retraining
- 32) 110.6(C) Emergency Response Training
- 33) 110.8 Test Instruments & Equipment
- 34) 110.9 Portable Cord- and-Plug-Connected Electrical Equipment
- 35) 110.10 Ground-Fault Circuit-Interrupter (GFCI) Protection.
- 36) 120.1 LOTO Program
- 37) 120.2 LOTO Principles
- 38) 120.3 LOTO Equipment
- 39) 120.4(A) LOTO Procedures/ Planning
- 40) 120.4(B) LOTO Procedures/ Elements of Control
- 41) 120.4(B) LOTO Procedures/ Elements of Control
- 42) 120.5 Process for Establishing/Verifying Elec. Safe Work Condition
- 43) 130.1 Work Involving Electrical Hazards...General
- 44) 130.2 Energized Electrical Work Permit
- 45) 130.2(C) EEWB/Exemptions
- 46) 130.4 Shock Risk Assessment
- 47) 130.4(E&F) Shock Protection Boundaries/Limited Approach
- 48) 130.4(G) Restricted Approach Boundary
- 49) 130.5 Arc Flash Assessment
- 50) Table 130.5(C) Estimate of Likelihood of Occurrence of Arc Flash
- 51) 130.5(G) & Table 130.5(G) Incident Energy Analysis Method
- 52) 130.5(H) Equipment Labeling
- 53) 130.7(C) Personal Protective Equipment (PPE)
- 54) 130.7(C)(11-13) PPE, mat. Characteristics, not-permitted, Care & Main.
- 55) 130.7(C)(15) & Table 130.7(C)(15(a) Arc Flash PPE Category Method
- 56) Table 130.7(C)(15)(c) Personal Protective Equipment (PPE)

- 57) 130.7(D)(1) Insulated Tools and Equipment.
- 58) 130.7(D)(2) Barriers
- 59) 130.7(E) Alerting Techniques
- 60) 130.8 Other Precautions for Personnel Activities

III. Author (SME)

The following course was written by Mr. Byron Cropp of Oregon. Mr. Cropp apprenticed back in the field in the early nineties and has held several positions with different electrical companies before opening his own electrical contracting company in 2001. In 2008 Mr. Cropp shut down his business to become an electrical consultant for a national electrical company where he was asked to secure a master electrician license in Washington and a supervisor license in Oregon. During his spare time he has also written a code class for a third party educational company on NEC code changes.