

ELECTRICAL: Level One

26101-08 Orientation to the Electrical Trade (2.5 Hours)

Provides an overview of the electrical trade and discusses the career paths available to electricians

26102-08 Electrical Safety (10 Hours)

Covers safety rules and regulations for electricians. Teaches the necessary precautions to take for various electrical hazards found on the job. Also teaches the OSHA-mandated lockout/tagout procedure.

26103-08 Introduction to Electrical Circuits (7.5 Hours)

Offers a general introduction to the electrical concepts used in Ohm's law applied to DC series circuits. Includes atomic theory, electromotive force, resistance, and electric power equations.

26104-08 Electrical Theory (7.5 Hours)

Introduces series, parallel, and series-parallel circuits. Covers resistive circuits, Kirchoff's voltage and current laws, and circuit analysis.

26105-08 Introduction to the *National Electrical Code* (7.5 Hours)

Provides a navigational road map for using the NEC. Introduces the layout of the NEC and the types of information found within the code book. Allows trainees to practice finding information using an easy-to-follow procedure.

26106-08 Device Boxes (10 Hours)

Covers the hardware and systems used by an electrician to mount and support boxes, receptacles, and other electrical components. Covers NEC fill and pull requirements for device, pull and junction boxes under 100 cubic inches.

26107-08 Hand Bending (10 Hours)

Provides a introduction to conduit bending and installation. Covers the techniques for using hand-operated and step conduit benders, as well as cutting, reaming, and threading conduit.

26108-08 Raceways and Fittings (20 Hours)

Introduces the types and applications of raceways, wireways, and ducts. Stresses the appropriate NEC requirements.

26109-08 Conductors Cables (10 Hours)

Focuses on the types and applications of conductors and covers proper wiring techniques. Stresses the appropriate NEC requirements.

26110-08 Basic Electrical Construction Drawings (7.5 Hours)

Focuses on electrical prints, drawings, and symbols. Teaches the types of information that can be found on schematics, one-lines, and wiring diagrams.

26111-08 Residential Electrical Services (15 Hours)

Covers the electrical devices and wiring techniques common to residential construction and maintenance. Allows trainees to practice making service calculations. Stresses the appropriate NEC requirements.

26112-08 Electrical Test Equipment (5 Hours)

Focuses on proper selection, inspection, and use of common electrical test equipment, including voltage testers, clamp-on ammeters, ohmmeters, multimeters, phase/motor rotation testers, and data recording equipment. Also covers safety precautions and meter category ratings.

ELECTRICAL: Level Two

26201-08 Alternating Current (17.5 Hours)

Focuses on forces that are characteristic of alternating-current systems and the application of Ohm's law to AC circuits.

26202-08 Motors: Theory and Application (20 Hours)

Covers AC and DC motors, including the main components, circuits, and connections.

26203-08 Electric Lighting (15 Hours)

Introduces the basic principles of human vision and the characteristics of light. Focuses on the handling and installation of various types of lamps and lighting fixtures.

26204-08 Conduit Bending (15 Hours)

Covers all types of bends in all sizes of conduit up to 6 inches. Focuses on mechanical, hydraulic, and electrical benders.

26205-08 Pull and Junction Boxes (12.5 Hours)

Driven by the NEC. Explains how to select and size pull boxes, junction boxes, and handholes.

26206-08 Conductor Installations (10 Hours)

Covers the transportation, storage, and setup of cable reels; methods of rigging; and procedures for complete cable pulls in raceways and cable trays.

26207-08 Cable Tray (7.5 Hours)

Focuses on NEC installation requirements for cable tray, including cable installations.

26208-08 Conductor Terminations and Splices (7.5 Hours)

Describes methods of terminating and splicing conductors of all types and sizes, including preparing and taping conductors.

26209-08 Grounding and Bonding (15 Hours)

Focuses on the purpose of grounding and bonding electrical systems. Thoroughly covers NEC requirements.

26210-08 Circuit Breakers and fuses (12.5 Hours)

Describes fuses and circuit breakers along with their practical applications. Also covers sizing.

26211-08 Control Systems and Fundamental Concepts (12.5 Hours)

Gives basic descriptions of various types of contactors and relays along with their practical applications.

ELECTRICAL: Level Three

26301-08 Load Calculations – Branch Feeders and Circuits (17.5 Hours)

Explains how to calculate branch circuits and feeder loads for various residential and commercial applications.

26302-08 Conductor Selection and Calculations (15 Hours)

Covers the types various factors involved in conductor selection, including insulation types, current-carrying capacity, temperature ratings, and voltage drop.

26303-08 Practical Applications of Lighting (12.5 Hours)

Covers specific types of incandescent, fluorescent, and HID lamps, as well as ballasts, troubleshooting, and various types of lighting controls.

26304-08 Hazardous Locations (15 Hours)

Covers the NEC requirements for equipment installed in various hazardous locations.

26305-08 Overcurrent Protection (25 Hours)

Explains how to size and select circuit breakers and fuses for various applications. Also covers circuit calculations and troubleshooting.

26306-08 Distribution Equipment (12.5 Hours)

Discusses switchboards and switchgear, including installations, grounding, and maintenance requirements. This module includes blueprints.

26307-08 Transformers (12.5 Hours)

Discusses transformer types, construction, connections, protection, and grounding.

26308-08 Commercial Electrical Services (10 Hours)

Covers the components, installation considerations, and NEC requirements for various commercial services.

26309-08 Motor Calculations (12.5 Hours)

Covers calculations required to size conductors and overcurrent protection for motor applications.

26310-08 Voice, Data, and Video (10 Hours)

Covers installation, termination, and testing of various voice, data, and video cabling systems.

26311-08 Motor Controls (12.5 Hours)

Provides information on selecting, sizing, and installing motor controllers. Also covers control circuit pilot devices and basic relay logic.

ELECTRICAL: Level Four

26401-08 Load Calculation – Feeders and Services (20 Hours)

Topic includes basic calculation procedures for commercial and residential applications..

26402-08 Health Care Facilities (10 Hours)

Covers the installation of electric circuits in health care facilities, including the requirements for life safety and critical circuits.

26403-08 Standby and Emergency Systems (10 Hours)

Explains the NEC requirements for electric generators and storage batteries.

26404-08 Basic Electronic Theory (10 Hours)

Explains the function and operation of basic electronic devices, including semiconductors, diodes, rectifiers, and transistors.

26405-08 Fire Alarm Systems (15 Hours)

Covers the fire alarm control units, Digital Alarm Communicator Systems (DACS), wiring for alarm initiating and notification devices, and alarm system maintenance.

26406-08 Specialty Transformers (10 Hours)

Covers various types of transformers and their applications. Also provides information on selecting, sizing, and installing these devices.

26407-08 Advanced Controls (20 Hours)

Discusses applications and operating principles of solid-state controls, reduced-voltage starters, and adjustable frequency drives. Also covers basic troubleshooting procedures.

26408-08 HVAC Controls (15 Hours)

Provides a basic overview of HVAC systems and their controls. Also covers electrical troubleshooting and NEC requirements.

26409-08 Heat Tracing and Freeze Protection (10 Hours)

Covers various heat tracing systems along with their applications and installation requirements.

26410-08 Motor Operation and Maintenance (10 Hours)

Covers motor cleaning, testing, and preventive maintenance. Also describes basic troubleshooting procedures.

26411-08 Medium-Voltage Terminations/Splices (10 Hours)

Offers an overview of the NEC and cable manufacturers' requirements for medium-voltage terminations and splices.

26412-08 Special Locations (20 Hours)

Describes the NEC requirements for selecting and installing equipment, enclosures, and devices in various locations including places of assembly, theaters, carnivals, agricultural buildings, marinas, temporary installations, wired partitions, and swimming pools.

26413-08 Introductory Skills for the Crew Leader (16 Hours)

Teaches basic leadership skills required to supervise personnel. Discusses principles of project planning, scheduling, estimating, management, and presents several case studies for student participation.