

Electrical Apprenticeship Program Courses

Course	Credits	Total Class Hours
Electrical Theory 1 Construction Introduces the apprentice to the basic electrical concepts of structure of matter, electron theory; Ohm's law for series-parallel circuits; volt and current measurements; conductors and resistors; electrical power and energy; and the National Electrical Code.	4	144
Electrical Theory 2 Construction Introduces the apprentice to magnetism, electricity generation, electromagnetism, application of electromagnetic devices, and principles of general and DC motor control and operation with continued study of the National Electrical Code.	4	144
Electrical Theory 3 Construction Introduces the apprentice to AC circuits, including mathematics for the circuits, vectors and vector analysis, sine wave characteristics, resistive AC current, inductance and inductive reactance, and RL circuits with continued study of the National Electrical Code.	4	144
Electrical Theory 4 Construction Expands the apprentice's ability to work with complex AC circuits, including capacitor types, capacitance, capacitive reactance, series RC circuits, inductance, parallel RL and RC circuits, series and parallel LCR circuit resonance, power in relative circuits, and basic power correction with continued study of the National Electrical Code.	4	144
Electrical Theory 5 Construction Introduces the apprentice to transformers and AC operation; split-phase motors, capacitor motors, shaded pole motors, wound rotor motors, universal motors, three-phase transformer systems and connections, and	4	144

three-phase motor operation with continued study of the National Electrical Code.

Electrical Theory 6 Construction

Enhances the apprentice’s ability to work with electrical symbols, line diagrams, manual AC and motor starters, solenoid characteristics, magnetic starters and contactors, time delay and complex control circuits, reversing starters, solid-state relays, and ladder logic.

	4	144
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Total	24	864
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Additional Courses

Course	Total Hours
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Residential Wiring / Occupational

Provides an overview in electrical construction wiring techniques for residential buildings.	36
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National Electrical Codes

Acquaints the apprentice with NEC calculations, NEC theory, and NEC content.	45
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National Electrical Code Updates

Acquaints the apprentice with the current year’s revisions / updates / changes with NEC calculations, theory, and content; also prepares for the NEC and Journeyman or Masters Electrical Exam.	18
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Motor Control Industrial

Provides a systematic approach to the study and application of motor control; both magnetic and electronic principles; motors, starters, and pilot devices; and control circuits including the development of both wiring diagrams and schematics.	45
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Welding

Provides the fundamentals of both arc and oxyacetylene welding of mild steel; with limited instruction in brazing, cast iron welding, manual flame-cutting and manual arc-cutting.	36
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OSHA Safety Construction

Provides the necessary OSHA Safety Construction Training requirements that are covered in 10 hours.	10
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Medic First Aid

Provides basic first aid knowledge and care in adult CPR, choking aid and emergency care. 8

Medic First Aid Recertification

Reviews the seven basic skills of first aid including CPR. 4

Transition to Trainer *

Apprentices will explore the skills necessary to be an effective trainer, discover how to deliver hands-on training, and examine the process for giving useful feedback. 8

*Required