

## **ELECTRICAL TECHNICIAN**

**6 Week Day Program/9 Week Evening Program**

**180 HRS.**

### **Program Objective**

This program is designed to teach students the basic technical skills, abilities and work habits required to pursue an entry-level position as an electrical technician. Graduates of this program will be able to apply the concepts of electrical theory learned with technical skills developed in adherence with the safe practice of standards as set forth by OSHA and the EPA. Graduates of this program may find entry-level employment as wire installers, trouble shooters and electrician assistants.

\*Students will receive a Certificate of Completion at the satisfactory completion of these courses.

### **Course Descriptions**

#### **ELT 101 - Introduction to Electrical Technician**

Introduction to Electrical Technician Skills Training introduces students to career opportunities in the electrical field as wire installers, trouble shooters, and electrician assistants. Upon completion of this subject, students will be able to: 1) Identify industry standards, 2) Practice safe work habits. 3) Understand course and instructor expectations.

[Prerequisites: None]

#### **ELT 102 - Safety, Tools, and Material Handling**

This subject prepares students to identify and practice key factors involved with worksite safety. 1) Describe and demonstrate proper general and personal worksite safety, 2) Properly identify and handle tools in a safe and proper method, and 3) How to properly handle (hot) or (live) materials such as: live wires or parts, live motors and switches.

[Prerequisites: ELT 101 Introduction to Electrical Technician Skills Training]

#### **ELT 103 - OSHA and EPA Regulations**

Students will learn compliance with OSHA and EPA regulations, learn to attend and/or conduct regular safety meetings, general OSHA requirements on the jobsite, the guidelines for OSHA Assured Equipment Grounding and GFCI usage, and use of material safety data sheets (MSDS) to identify and properly handle hazardous materials (e.g., cleaning fluids, transformer oils)

[Prerequisites: ELT 102 Safety, Tools and Material Handling]

#### **ELT 104 - Electrical Theory**

This subject introduces the student to how electricity is generated and how it is applied. Students will learn basic electrical theory to include: defining terms, units of measure, electron flow, producing electrical current, products (effects) of

electrical current, Ohm's Law, Kirchoff's Laws, Lenz's Law, Thevenin's and Norton's Theorems, series circuits, components, effects of changing voltage and resistance, law of proportion for series voltage divider circuits, power used in circuits by components, parallel circuits, differences between series and parallel circuits, total resistance using product-sum, reciprocal methods, alternate current paths law of proportion and power requirements of components and circuits power use and dissipation.

[Prerequisites: ELT 103 OSHA and EPA Regulations]

### **ELT 105 - Code Requirements**

This subject instructs the student about the purpose and intent of electrical codes. Students will learn: Scope of NEC and local codes, how local codes may differ from NEC, utilizing code book and mandatory rules, fine print rules, "Neat and workmanlike" applications, locate definitions and interpretations, recognize and use exceptions, materials recognized by the NEC, identify code markings, distinguish wet, damp and dry locations, determine if specific installations are acceptable to the code requirements for special occupancies and special equipment, grounding requirements and use NEC for hazardous locations.

[Prerequisites: CRT 204 Electrical Theory]

### **ELT 106 - Conduit, Raceways, Panel Boards, and Switchboards**

Upon completion of this subject, students will be able to demonstrate the proper installation and gage selection of conduit as well as: terms associated with conduits and raceways, conduit and wiring support systems recognized by code, select appropriate conduit type, select and utilize appropriate connectors, select and utilize appropriate fastening devices and reinforcements, calculate degrees in back-to-back bends, determine overall length of conduit for specific situations, locating bending points, the four techniques for segment bending, techniques and operations for making concentric bends, cable assembly wiring methods recognized by the code, function, operation and requirements for various panel boards and switch gear, proper installation of panels, and fabricating raceways and wiring support systems.

[Prerequisites: ELT 105 Code Requirements]

### **ELT 107 - Job Search Techniques**

Students will learn to demonstrate job search and retention techniques and identify job search strategies to prepare for employment.

[Prerequisites: ELT 106 Conduit, Raceways, Panelboards and Switchboards]

**20 Week Day Program/30 Week Evening Program**

**600 HRS.**

### **Program Objective**

This program is designed to teach students the basic technical skills, abilities and work habits required to pursue an entry-level position as an electrical technician.

Graduates of this program will be able to apply the concepts of electrical theory

learned with technical skills developed in adherence with the safe practice of standards as set forth by OSHA and the EPA. Graduates of this program may find entry-level employment as wire installers, trouble shooters and electrician assistants.

\*Students will receive a Certificate of Completion at the satisfactory completion of these courses.

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[Prerequisites: None]

#### **ELT 102 - Safety, Tools, and Material Handling**

This subject prepares students to identify and practice key factors involved with worksite safety. 1) Describe and demonstrate proper general and personal worksite safety, 2) Properly identify and handle tools in a safe and proper method. 3) How to properly handle (hot) or (live) materials such as: live wires or parts, live motors and switches.

[Prerequisites: ELT 101 Introduction to Electrical Technician Skills Training]

#### **ELT 103 - OSHA and EPA Regulations**

Students will learn compliance with OSHA and EPA regulations, learn to attend and/or conduct regular safety meetings, general OSHA requirements on the jobsite, the guidelines for OSHA Assured Equipment Grounding and GFCI usage, and use of material safety data sheets (MSDS) to identify and properly handle hazardous materials (e.g., cleaning fluids, transformer oils).

[Prerequisites: ELT 102 Safety, Tools and Material Handling]

#### **ELT 104 - Electrical Theory**

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[Prerequisites: ELT 103 OSHA and EPA Regulations]

### **ELT 105 - Code Requirements**

This subject instructs the student about the purpose and intent of electrical codes. Students will learn: Scope of NEC and local codes, how local codes may differ from NEC, utilizing code book and mandatory rules, fine Print Rules, "Neat and workmanlike" applications, locate definitions and interpretations, recognize and use exceptions, materials recognized by the NEC, identify code markings, distinguish wet, damp and dry locations, determine if specific installations are acceptable to the code requirements for special occupancies and special equipment, grounding requirements and use NEC for hazardous locations.

[Prerequisites: CRT 204 Electrical Theory]

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[Prerequisites: ELT 105 Code Requirements]

### **ELT 107 - Job Search Techniques**

Students will learn to demonstrate job search and retention techniques and identify job search strategies to prepare for employment.

[Prerequisites: ELT 106 Conduit, Raceways, Panelboards and Switchboards]

**30 Week Day Program/45 Week Evening Program**

**900 HRS.**

### **Program Objective**

This program is designed to teach students the basic technical skills, abilities and work habits required to pursue an entry-level position as an electrical technician. Graduates of this program will be able to apply the concepts of electrical theory learned with technical skills developed in adherence with the safe practice of standards as set forth by OSHA and the EPA. Graduates of this program may find entry-level employment as wire installers, trouble shooters and electrician assistants.

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[Prerequisites: None]

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[Prerequisites: ELT 101 Introduction to Electrical Technician Skills Training]

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[Prerequisites: ELT 102 Safety, Tools and Material Handling]

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[Prerequisites: ELT 103 OSHA and EPA Regulations]

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[Prerequisites: ELT 105 Code Requirements]

**ELT 107 - Job Search Techniques**

Students will learn to demonstrate job search and retention techniques and identify job search strategies to prepare for employment.

[Prerequisites: ELT 106 Conduit, Raceways, Panelboards and Switchboards]