

# ELECTRICAL (ELET)

## ELET 175 54 Hours

### Electrical Trades Mathematics I

**Advisory:** Challenge exam may be completed with a passing grade of 75% or higher.

A study of mathematics used in the electrical and construction trades including topics such as arithmetic, fractions, decimals, percents, graphing, measurement, and an introduction to algebra. Textbook Required. (Apportionment)

## ELET 176 54 Hours

### Electrical Trades Mathematics II

**Prerequisite(s):** ELET 175 Electrical Trades Mathematics I.

This course will present basic algebra and trigonometry and their application to the solution of practical problems in the electrical construction field with an emphasis on trigonometric solutions to alternating current electrical theory. (Apportionment)

## ELET 178 32 Hours

### OSHA Standards for Construction

This course covers Occupational Safety and Health Administration (OSHA) policies, procedures, and standards, as well as construction safety and health principles. Topics include scope and application of the OSHA construction standards. Special emphasis is placed on those areas that are the most hazardous, using OSHA standards as a guide. Upon successful course completion, the student will receive an OSHA 30 Hour Construction Outreach Training Completion Card. (Apportionment)

## ELET 180 54 Hours

### Electrical Conduit Bending

This course is a study of how to properly calculate, layout, and bend Electrical Metallic Tubing (EMT) and Rigid Metal Conduit (RMC) per industry and National Electrical Code standards. This course utilizes both hand bending tools and the use of mechanical and machine type bending equipment. (Apportionment)

## ELET 190 54 Hours

### National Electrical Code - Residential

This course is an introduction to the National Electrical Code. The interpretation of electrical wiring diagrams, material use, installation methods and calculations of electrical loads to size feeders, branch circuits and conductors as they relate to residential occupancies is included. (Apportionment)

## ELET 191 54 Hours

### National Electrical Code - Commercial

This course covers the National Electrical Code requirements for commercial, office, and light industrial wiring. The electrical layout and design of commercial buildings, feeder circuit calculations, branch circuit calculations and circuit overcurrent protection are included. (Apportionment)

## ELET 192 54 Hours

### National Electrical Code - Industrial

This course covers the National Electrical Code requirements for industrial application. Materials and wiring methods for heavy industrial applications, life safety, and hazardous systems are included. (Apportionment)

## ELET 195 54 Hours

### Electrical Cost Estimating

This course will present an introduction to electrical cost estimating, including take-off, and listing procedures. It is designed for students preparing to enter electrical estimating occupations or electrical contracting work. (Apportionment)

## ELET 196 54 Hours

### Blueprint Reading Basics

This course uses a fundamental approach to blueprint reading. Students will become familiar with basic blueprint terms, components, and symbols. Students will also learn different type(s) of blueprint drawings (civil, architectural, structural, mechanical, plumbing/piping, and electrical) and how to interpret and use drawing dimensions. (Apportionment)

## ELET 205 54 Hours

### Electrical Fundamentals I - Residential

**Prerequisite(s):** ELET 175 Electrical Trades Mathematics I.

**Corequisite(s):** Must be taken concurrently with ELET 210 Electrical Laboratory Practices I.

This course introduces the student to the elements of basic direct current circuits and residential type construction with an emphasis on wiring principles and basic residential design. The student will perform a "hands on" design of a basic residential blueprint with all components in strict accordance with the requirements of the National Electrical Code. (Apportionment)

## ELET 206 54 Hours

### Electrical Fundamentals II - Commercial

**Prerequisite(s):** ELET 205 Electrical Fundamentals I - Residential and ELET 176 Electrical Trades Mathematics II.

**Corequisite(s):** Must be taken concurrently with ELET 211 -Electrical Laboratory Practices II.

Course provides an overview of the National Electrical Code (NEC) and its application to commercial wiring. Topics include commercial wiring, conduit systems, conductor types and applications, over-current protection, single and three distribution systems and equipment, grounding, and lighting sources in accordance with the NEC. (Apportionment)

## ELET 207 54 Hours

### Electrical Fundamentals III - Industrial

**Prerequisite(s):** ELET 205 Electrical Fundamentals I - Residential and ELET 206 Electrical Fundamentals II - Commercial.

**Corequisite(s):** Must be taken concurrently with ELET 212 - Electrical Laboratory Practices III.

Course provides an overview of the National Electrical Code (NEC) and its application to industrial wiring. Topics include industrial wiring, conduit systems, conductor types and applications, over-current protection, electrical motors, motor circuit conductors, motor control circuits, and industrial electrical power installations in accordance to the National Electrical Code. (Apportionment)

## ELET 210 54 Hours

### Electrical Laboratory Practices I

**Corequisite(s):** Must be taken concurrently with ELET 205 - Electrical Fundamentals I - Residential.

This course covers laboratory work associated with the fundamentals of DC electricity, electromagnetism, series, parallel and combination circuits, wiring practices, and hand tools. (Apportionment)

## ELET 211 54 Hours

### Electrical Laboratory Practices II

**Prerequisite(s):** ELET 210 Electrical Laboratory Practices I.

**Corequisite(s):** Must be taken concurrently with ELET 206 -Electrical Fundamentals II - Commercial.

This course includes lab work associated with the fundamentals of alternating current electricity. Alternating current principles, practices, and safe wiring with hand tools and instrumentation are included. Textbook Required. (Apportionment)

**ELET 212**

**54 Hours**

**Electrical Laboratory Practices III**

**Prerequisite(s):** *ELET 211 Electrical Laboratory Practices II.*

**Corequisite(s):** *Must be taken concurrently with ELET 207 - Electrical Fundamentals III - Industrial.*

This course covers the theoretical and practical principles involving the control of alternating current motors with electromechanical and programmable logic controller (PLC) type equipment. Industry standard wiring practices and troubleshooting methods are covered. Textbook Required. (*Apportionment*)

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