



## Introductory Electrician Part 2

Welcome to TE012: Introductory Electrician Part 2!

Please read the information in this syllabus before proceeding to the course materials.

**Credits** 1 credit hour

**Prerequisites** TE011

### INSTRUCTIONAL TEAM

Our Academic Advisors are also available to help you when you need it. They are trained to provide answers to your questions about the course or program.

Phone: 1-800-224-7234

Hours: 8:30AM – 8:30PM (Eastern Standard Time), Monday-Friday

### MAIL

James Madison High School  
6625 The Corners Parkway, Suite 500  
Norcross, GA 30092

### TEXTBOOK

Cauldwell, R (2014) *Wiring a House* (5<sup>th</sup> ed.). Newtown, CT: The Taunton Press, Inc.

Redwood, R, Hansen, D, Morrissey, P (2018) *Code Check: An Illustrated Guide to Wiring a Safe House* (8<sup>th</sup> ed.). Newtown, CT: The Taunton Press, Inc.

Holzman, H (2018) *Modern Commercial Wiring* (7<sup>th</sup> ed.). Tinley Park, IL: The Goodheart-Wilcox Company, Inc.

### COURSE DESCRIPTION

The Electrician Training program provides students with the theory and work practices necessary to pursue entry-level employment in the electrical trades. This program covers safety for electrical equipment installation and tool usage, basic electricity and AC current theory, and a wide range of installation procedures for both residential and commercial properties that are compliant with the requirements of the National Electrical Code (NEC). Students are also introduced to electrical practices commonly required in industrial manufacturing as well as advanced print reading and career development.

### LEARNING OBJECTIVES

After completing the Electrician Training program, students will be able to:

- Describe the basic materials and tools used for standard residential electrical projects and describe how they are applied as part of the construction and home-repair process.
- Explain the importance of safe work practices and describe the safe use and application of



electrical wiring and equipment.

- Identify the components and assembly configurations of basic and advanced wiring systems used in residential and light commercial/industrial applications.
- Outline the components and functions of branch, feeder, and service circuits and installations.
- Identify and describe the application and installation of standard electrical fixtures and electric-powered appliances.
- Outline the electrical installation of related building systems, such as communications, computer, and security wiring.
- Explain the basic concepts related to industrial systems and their installation, including transformers, PLCs, motors, motor controls, and the special equipment and installation required in hazardous locations.

<b>LESSONS</b>	<b>TOPICS</b>
<b>Lesson 1: Wiring a Residence to NEC and IRC Codes</b>	Students will be introduced to the National Electrical Code (NEC) and the International Residential Code (IRC) and how these codes are interpreted and applied for common residential construction.
<b>Lesson 2: Introduction to Commercial Wiring</b>	This lesson begins with a review of print reading, wiring practices, and conductor identification and application as they apply to commercial installations. Students are also briefed on the basic differences between commercial and residential electrical installations.
<b>Lesson 3: Conduit Work</b>	Students will learn to identify and specify the types of conduit systems and electrical boxes specific to commercial and industrial wiring projects.
<b>Lesson 4: Electrical Equipment for Commercial Installations</b>	An overview of wiring practices and methods for equipment installation students would encounter on commercial assignments. Students will understand the different requirements for commercial services and grounding systems and will learn about various types of transformers and their installation.
<b>Lesson 5: Electrical Circuits and Systems</b>	The final lesson in this program will provide students with instruction on a range of components and systems unique to commercial installations. Coverage includes the applications of branch and feeder circuits, motors and motor controls and the specific equipment and installation practices required for hazardous locations. Students will also be introduced to maintenance and troubleshooting techniques used by professional electricians working in a commercial setting.

## **GRADING**

The following point totals correspond to the following grades:



## POINTS GRADE

100-90	A
89-80	B
79-70	C
65-69	D
Below 65	F

James Madison High School allows 2 attempts on exams. If a student is not satisfied with his/her score on the 1st attempt, an exam may be resubmitted. The 2nd attempt is not required as long as the final course average is above 65%. The higher of the 2 attempts will be the score that counts towards the final average.

Exams are timed and once you begin an exam, the timer runs continuously, even if you leave the course. Refer to the exam instructions for the time limit (in most cases 3 hours), but the time limit cannot be spread over multiple days.

## GRADE WEIGHT

TOPIC	ACTIVITY	PERCENTAGE
Lesson 1: Wiring a Residence to NEC and IRC Codes	MC Quiz	16%
Lesson 2: Introduction to Commercial Wiring	MC Quiz	16%
Lesson 3: Conduit Work	MC Quiz	16%
Lesson 4: Electrical Equipment for Commercial Installations	MC Quiz	16%
Lesson 5: Electrical Circuits and Systems	MC Quiz	16%
Final Exam	MC Quiz	20%

## ACADEMIC AND COURSE POLICIES

Please see the Academic Policies section in the James Madison High School Catalog for information on Course policies, including the Exam/Assignment Retake Policy, Grading Policy, Academic Honesty Policy, and Student Conduct Policy.