



Introductory Electrician Part 1

Welcome to TE011: Introductory Electrician Part 1!

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

Credits 1 credit hour

Prerequisites None

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* (5th ed.). Newtown, CT: The Taunton Press, Inc.

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

Holzman, H (2018) *Modern Commercial Wiring* (7th 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.

LESSONS	TOPICS
Lesson 1: Introduction to Construction Technology	An overview of potential career paths and professional development available for students who formally develop skills and knowledge related to building construction. This lesson includes a summary of math and science concepts important to building professionals as well as applications of modern technologies to the construction workplace. The lesson concludes with an overview of general workplace safety practices and applications of personal protection equipment.
Lesson 2: Electrical Basics and Tools	Students will learn the terminology used by electricians related to basic electrical theory, wiring practices and devices. This lesson also covers the identification and safe application of hand and power tools required used to complete electrical wiring assignments. Coverage includes the application and interpretation of basic test meters and circuit analysis equipment.
Lesson 3: The Service Entrance and Electrical Panels	This lesson covers the devices and installation techniques used for the installation of the service entrance and the main service panel.
Lesson 4: Grounding and Wiring	A summary of the critical concept of electrical grounding and the practices and materials used to insure proper grounding in new and remodeled structures. Students will also learn about how to properly install wiring systems in new and existing buildings.
Lesson 5: Electrical Wiring Protection Devices	In this lesson students will learn to identify and properly apply circuit protection devices like fuses, circuit breakers, GFCIs, and AFCIs in residential construction.
Lesson 6: Electrical Boxes, Receptacles and Switches	Students learn the skills needed to select the appropriate size and style of electrical boxes and the related wiring techniques and requirements for the installation of common receptacles and switches.
Lesson 7: Installing Lighting, Ceiling Fans, and Appliances	This lesson continues student instruction of the safe installation practices for electrical devices and equipment such as various lighting fixtures, ceiling fans and common appliances for kitchen and utility applications as well as heating and recreational applications. Students also learn about equipment



installations used for surge protection and are introduced to modern wiring practices required for communication cabling.

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: Introduction to Construction Technology	MC Quiz	14.29%
Lesson 2: Electrical Basics and Tools	MC Quiz	14.29%
Lesson 3: The Service Entrance and Electrical Panels	MC Quiz	14.29%
Lesson 4: Grounding and Wiring	MC Quiz	14.29%
Lesson 5: Electrical Wiring Protection Devices	MC Quiz	14.28%
Lesson 6: Electrical Boxes Receptacles and Switches	MC Quiz	14.28%
Lesson 7: Installing Lighting	MC Quiz	14.28%



Ceiling Fans and Appliance		
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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.

