



# Electrical Technology

The Electrical Technology program of study focuses on occupational and educational opportunities associated with installing, maintaining, and repairing electrical wiring, equipment, and fixtures.



## Courses for High School Credit

<b>Level 1</b>	• Principles of Applied Engineering
<b>Level 2</b>	• Foundations of Energy
<b>Level 3</b>	• AC/DC Electronics • Electrical Technology I
<b>Level 4</b>	• Electrical Technology II

## Aligned Post-Secondary Credential

- Electrical Technology, Level 1 Certificate (Awarded by Lone Star College)

## Work-Based Learning and Expanded Learning Opportunities

<b>Work-Based Learning Activities</b>	<ul style="list-style-type: none"> <li>• Participate in an internship with an electrical company to develop installation skills</li> <li>• Join a pre-apprenticeship program that involved determining if electrical wiring is up to code</li> <li>• Interview an electrician about their training and education</li> </ul>
<b>Expanded Learning Opportunities</b>	<ul style="list-style-type: none"> <li>• Tour an electrical company / job site</li> </ul>



Successful completion of the Electrical Technology program of study will fulfill requirements of the STEM endorsement if the math and science requirements are met or the Business and Industry endorsement.

## Example Postsecondary Opportunities

### Apprenticeships

- Electrician



### Associate Degrees

- Electrical and Power Transmission Installation
- Electrical Power and Controls
- Electromechanical Technology

### Bachelor's Degrees

- Construction Engineering
- Electrical, Electronic, and Communications
- Engineering, Electrical Engineering

### Master's, Doctoral, and Professional Degrees

- Construction Engineering
- Construction Management

### Additional Stackable IBCs/License

- Journeyman Electrician
- Master Electrician

## Example Aligned Occupations

*(Based on statewide employment data)*



### Electrician Helpers

Median Wage: \$38,140  
Annual Openings: 1,632  
10-Year Growth: 20%

### Electricians

Median Wage: \$54,769  
Annual Openings: 9,221  
10-Year Growth: 27%

### Construction Managers

Median Wage: \$95,072  
Annual Openings: 6,325  
10-Year Growth: 24%



For more information visit:  
<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



# Electrical Technology Course Descriptions:

## Principles of Applied Engineering- NRG0000 (1 Credit)

Level: 1

Course Fee: None

Prerequisites: None

GPA Weight: Regular

Principles of Applied Engineering provides an overview of the various fields of science, technology, engineering, and mathematics and their interrelationships. Students will develop engineering communication skills, which include computer graphics, modeling, and presentations, by using a variety of computer hardware and software applications to complete assignments and projects. Upon completing this course, students will understand the various fields of engineering and will be able to make informed career decisions. Further, students will have worked on a design team to develop a product or system. Students will use multiple software applications to prepare and present course assignments.



## Foundations of Energy- NRG1500 (1 credit)

Level: 2

Course Fee: None

Prerequisites: None

GPA Weight: Regular

Foundations of Energy provides students with the fundamentals of Texas energy resources from conventional, unconventional, and renewable sources. Students develop knowledge and skills regarding career and educational opportunities in the production, transmission, and use of energy in Texas, including import and export markets for energy.

## AC/DC Electronics- NRG1003D (1 credit)

Level: 3

Course Fee: \$125 per semester

Prerequisites: None

GPA Weight: Advanced

AC/DC Electronics focuses on the basic electricity principles of alternating current/direct current (AC/DC) circuits. Students will demonstrate knowledge and applications of circuits, electronic measurement, and electronic implementation. Through use of the design process, students will transfer academic skills to component designs in a project-based environment. Students will use a variety of computer hardware and software applications to complete assignments and projects. Additionally, students will explore career opportunities, employer expectations, and educational needs in the electronics industry.

**Note: This course will be taken at the Lone Star College - Creekside Center.**



Successful completion of the Electrical Technology program of study will fulfill requirements of the STEM endorsement if the math and science requirements are met or the Business and Industry endorsement.

## Electrical Technology I- NRG2105D (1 credit)

Level: 3

Course Fee: \$125 per semester

Prerequisites: None

GPA Weight: Advanced

In Electrical Technology I, students will gain knowledge and skills needed to enter the workforce as an electrician or building maintenance supervisor, prepare for a postsecondary degree in a specified field of construction or construction management, or pursue an approved apprenticeship program. Students will acquire knowledge and skills in safety, electrical theory, tools, codes, installation of electrical equipment, and the reading of electrical drawings, schematics, and specifications.

**Note: This course will be taken at the Lone Star College - Creekside Center.**

## Electrical Technology II - NRG3300D (2 credits)

Level: 4

Course Fee: \$125 per semester

Prerequisites: Electrical Tech I

GPA Weight: Advanced

In Electrical Technology II, students will gain advanced knowledge and skills needed to enter the workforce as an electrician, a building maintenance technician, or a supervisor; prepare for a postsecondary degree in a specified field of construction or construction management; or pursue an approved apprenticeship program. Students will acquire knowledge and skills in safety, electrical theory, tools, codes, installation of electrical equipment, alternating current and direct current motors, conductor installation, installation of electrical services, and electric lighting installation.

**Note: This course will be taken at the Lone Star College - Creekside Center.**



Electrical Technology



For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>