



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

Level 1	• Foundations of Energy
Level 2	• Energy and Natural Resource Technology
Level 3	Blocked Courses: • AC/DC Electronics (Level 2 with the State) AND • Electrical Technology I (Level 2 with the State)
Level 4	• Electrical Technology II

Aligned Post-Secondary Credential

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

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	• Participate in an internship with an electrical company to develop installation skills • Join a pre-apprenticeship program that involved determining if electrical wiring is up to code • Interview an electrician about their training and education
Expanded Learning Opportunities	• Tour an electrical company / job site

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%





Electrical Technology Course Descriptions:

Foundations of Energy- NRG1500 (1 credit) (starting in 26-27)

Level: 1

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.



Energy and Natural Resource Technology - NRG1600 (1 credit)

Level: 2

Course Fee: None

Prerequisites: None

GPA Weight: Regular

Energy and Natural Resource Technology examines the interrelatedness of environmental issues and production agriculture. Students will evaluate the environmental benefits provided by sustainable resources and green technologies. Instruction is designed to allow for the application of science and technology to measure environmental impacts resulting from production agriculture through field and laboratory experiences. To prepare for careers in environmental service systems, students must attain academic skills and knowledge, acquire advanced technical knowledge and skills related to environmental service systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations.

AC/DC Electronics- NRG1200D (1 credit) (Level 2 with the State)

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 Tomball Innovation 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- NRG1200D (1 credit) (Level 2 with the State)

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 Tomball Innovation 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 Tomball Innovation Center

