



Architecture and Construction Career Cluster

The Architecture and Construction career cluster focuses on designing, planning, managing, building, and maintaining the built environment. This career cluster includes occupations ranging from architect, carpenter, and construction manager to electrician, plumber and heating, air conditioning and refrigeration technician.

Statewide Program of Study: *Electrical*

The Electrical program of study focuses on occupational and educational opportunities associated with installing, maintaining, and repairing electrical wiring, equipment, and fixtures. The program of study also addresses installing and repairing telecommunications cable including fiber optics.



Secondary Courses for High School Credit

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| Level 1 | • Principles of Construction |
| Level 2 | • Electrical Technology I |
| Level 3 | • Electrical Technology II |
| Level 4 | • Extended Career Prep for Programs of Study |

Aligned Advanced Academic Courses

Dual Credit	Dual credit offerings will vary by local education agency.
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Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards concentrator/completer status for this program of study.

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 involves determining if electrical wiring is up to code
- Interview an electrician about their training and education

Expanded Learning Opportunities

- Participate in SkillsUSA
- Participate in trade competitions

Aligned Industry-Based Certifications

- NCCER Core
- NCCER Electrical Level I
- NCCER Electrical Level II



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

Electricians 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%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024



For more information visit:

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

COURSE INFORMATION

COURSE NAME	COURSE NUMBER AND CREDITS	PREREQUISITES (PREQ) COREQUISITES (CREQ)	GRADE
Principles of Construction	8410 (1 credit)	None	9-10
Electrical Technology I	8416 (1 credit)	Principles of Construction	10-11
Electrical Technology II	8417 (2 credits)	Electrical Technology I	11-12
Extended Career Prep for Programs of Study Reg or DC	8607 (3 credits) or 8607DC & D2 (3 credits)	Electrical Technology I DC: pre-req & SWTX reqs.	12

COURSE DESCRIPTIONS

Principles of Construction:

This course helps build foundation skills in construction. Jobsite safety, construction math, hand tools and power tools training coupled with communication and employability skills provide an excellent opportunity and insight into the career paths of the construction industry.

Electrical Technology I:

This is a two-hour class where students start learning and developing skills in basic electrical theory and installation methods. The class begins with an orientation into the Electrical Trade and Electrical Safety. National Electrical Codes, Ohm's law, conduit bending, wire pulling, and electrical testing equipment are all topics discussed in the classroom and practiced in the lab.

Electrical Technology II:

This is a two-hour class for students to continue their electrical technology education. Classroom instruction coupled with hands-on training in the lab involves electric motors, light fixtures, circuit breakers and panel boards. An added bonus is that qualified students are sent around campus to perform various work-orders. These students develop a plan, order materials, select the necessary tools, and do the electrical work while practicing safety and report back to the instructor on the status of the project. Real work using real tools and real electricity!

Extended Career Prep for Programs of Study Reg or DC:

College Credit: BMGT 1382

Students are given the opportunity to work in their program of study while earning high school credit and develop employment experiences, which must be related to the student's current program of study alongside advanced classroom instruction. The goal is to prepare students with a variety of skills to transition from job- to career-mindedness. This course provides a continuing focus on collaborative feedback between the employer, teacher, and student. Students are taught about finding their future careers, keeping, as well as leaving, a job, and how to expound on their employable talents.

Courses in yellow are Level 3 or 4 courses.



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