



## Architecture and Construction

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.



### Program of Study: Electrical (Dual Credit Program)

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.

#### Courses

9 <sup>th</sup> Grade	Principles of Architecture
10 <sup>th</sup> Grade	Architectural Design I
11 <sup>th</sup> Grade	Electrical Technology I @ San Jacinto College
12 <sup>th</sup> Grade	Electrical Technology II @ San Jacinto College

#### Work-Based Learning/Expanded Learning Opportunities

<b>Work-Based Learning Activities</b>	<ul style="list-style-type: none"> <li>Earn industry certification</li> <li>Intern or shadow an electrician</li> </ul>
<b>Expanded Learning Opportunities</b>	<ul style="list-style-type: none"> <li>SkillsUSA</li> <li>Earn dual credit hours</li> </ul>

#### Aligned Industry-Based Certifications

- NCCER Electrical Level I



#### 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%

Successful completion of this program of study will fulfill requirements of the Business and Industry Endorsement.  
Approved Statewide Program of Study. C. E. King High School – 2024-25



## Electrical Course Information

### Level 1

#### Principles of Architecture

13004210

**Grade: 9-10**

**Credit: 1**

Principles of Architecture provides an overview to the various fields of architecture, interior design, and construction management. Achieving proficiency in decision making and problem solving is an essential skill for career planning and lifelong learning. Students use self-knowledge, education, and career information to set and achieve realistic career and educational goals. Job-specific training can be provided through training modules that identify career goals in trade and industry areas. Classroom studies include topics such as safety, work ethics, communication, information technology applications, systems, health, environment, leadership, teamwork, ethical and legal responsibility, employability, and career development and include skills such as problem solving, critical thinking, and reading technical drawings.

### Level 2

#### Architectural Design I

13004600

**Grade: 10-12**

**Credit: 1**

*Prerequisite: Algebra I and English I*

*Recommended Prerequisite: Principles of Architecture*

In Architectural Design I, students will gain knowledge and skills needed to enter a career in architecture or construction or prepare a foundation toward a postsecondary degree in architecture, construction science, drafting, interior design, or landscape architecture. Architectural Design I includes the knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for nonresidential or residential architectural purposes.

#### Electrical Technology I @ San Jacinto College

13005600

**Grade: 11-12**

**Credit: 1**

*Prerequisite: Meet the San Jacinto College entrance requirements*

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.

### Level 3

#### Electrical Technology II @ San Jacinto College

13005700

**Grade: 11-12**

**Credit: 2**

*Prerequisite: Electrical Technology I*

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.