



# 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: *Plumbing and Pipefitting*

The Plumbing and Pipefitting program of study focuses on occupational and educational opportunities related to assembling, installing, and repairing pipes, fittings, or fixtures of heating, water, and drainage systems. The program of study includes maintaining pipe supports and related hydraulic or pneumatic equipment for steam, hot water, heating, cooling, lubricating, and sprinkling.



### Secondary Courses for High School Credit

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|----------------|---|
| <b>Level 1</b> | <ul style="list-style-type: none"> <li>Principles of Architecture</li> <li>Principles of Construction</li> <li>Introduction to Welding</li> </ul>   |
| <b>Level 2</b> | <ul style="list-style-type: none"> <li>Pipefitting Technology I</li> <li>Pipefitting Technology Lab I</li> <li>Plumbing Technology I</li> <li>Building Maintenance Technology I</li> <li>Entrepreneurship I</li> </ul>  |
| <b>Level 3</b> | <ul style="list-style-type: none"> <li>Pipefitting Technology II</li> <li>Pipefitting Technology Lab II</li> <li>Plumbing Technology II</li> </ul>  |
| <b>Level 4</b> | <ul style="list-style-type: none"> <li>Practicum in Entrepreneurship</li> <li>Practicum in Construction Technology</li> <li>Practicum in Construction Technology + Extended Practicum in Construction Technology</li> <li>Career Preparation for Programs of Study</li> <li>Career Preparation for Programs of Study + Extended Career Preparation</li> </ul> |

### Aligned Advanced Academic Courses

**Dual Credit** Dual credit offerings will vary by Local Education Agency.

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 toward Completer status for this program of study.

### Work-Based Learning and Expanded Learning Opportunities

**Work-Based Learning Activities**

- Complete a pre-apprenticeship in plumbing or pipefitting to develop skills in assembling, installing, and repairing pipes
- Shadow a plumber who is repairing and drainage systems

**Expanded Learning Opportunities**

- Participate in SkillsUSA
- Tour apprenticeship programs

### Industry-Based Certifications

- HBI Pre-Apprenticeship Certificate Training (PACT), Core
- Industrial Technology Maintenance (ITM)—Maintenance Piping
- NCCER Core
- NCCER Industrial Pipefitter
- NCCER Pipefitting Level I
- NCCER Plumbing Level I
- NCCER Plumbing Level II
- Tradesman Plumber - Limited



### Postsecondary Opportunities

**Apprenticeships**

- Plumber
- Pipefitter

**Associate Degrees**

- Pipefitting/Pipefitter and Sprinkler Fitter
- Construction Site Management
- Plumbing Technology
- Property Maintenance

**Bachelor's Degrees**

- Construction Engineering
- Construction Management

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

- Construction Engineering
- Construction Management

**Additional Stackable IBCs/Licensures**

- Journeyman Plumber
- Master Plumber



### Example Aligned Occupations

**Helpers—Pipelayers, Plumbers, Pipefitters, and Steamfitters**

Median Wage: \$36,352  
Annual Openings: 1,482  
10-Year Growth: 26%

**Plumbers, Pipefitters, and Steamfitters**

Median Wage: \$55,804  
Annual Openings: 5,751  
10-Year Growth: 22%

**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>








# Architecture and Construction Career Cluster

## Statewide Program of Study: Plumbing and Pipefitting


















### Course Information



Level 1

Course	Prerequisites   Corequisites	Career Clusters
<b>Principles of Architecture*</b> 13004210 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	 
<b>Principles of Construction*</b> 13004220 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
<b>Introduction to Welding</b> 13032250 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	 

Level 2

Course	Prerequisites   Corequisites	Career Clusters
<b>Pipefitting Technology I</b> N1300425 (1 credit)	<b>Prerequisites:</b> Algebra I and Geometry <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Introduction to Manufacturing, Principles of Construction, or Construction Technology I. <b>Recommended Corequisites:</b> None	
<b>Pipefitting Technology I + Pipefitting Technology Lab I</b> N1300427 (2 credits)	<b>Prerequisites:</b> Algebra I and Geometry <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
<b>Plumbing Technology I</b> 13006000 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Principles of Architecture, Principles of Construction, or Construction Technology I <b>Recommended Corequisites:</b> None	 
<b>Building Maintenance Technology I*</b> 13005400 (2 credits)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Principles of Architecture or Principles of Construction <b>Recommended Corequisites:</b> None	
<b>Entrepreneurship I*</b> 13011101 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Principles of Business, Marketing and Finance <b>Recommended Corequisites:</b> None	         

Level 3

Course	Prerequisites   Corequisites	Career Clusters
<b>Pipefitting Technology II</b> N1300426 (1 credit)	<b>Prerequisites:</b> Pipefitting Technology I <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
<b>Pipefitting Technology II + Pipefitting Technology Lab II</b> N1300428 (2 credits)	<b>Prerequisites:</b> Pipefitting Technology I <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	

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\* Indicates course is included in more than one program of study.

For additional information on the **Architecture and Construction career cluster**, contact [cte@tea.texas.gov](mailto:cte@tea.texas.gov) or visit <https://tea.texas.gov/cte>



# Architecture and Construction Career Cluster

## Statewide Program of Study: Plumbing and Pipefitting

### Course Information

Level 3

Course	Prerequisites   Corequisites	Career Clusters
<b>Plumbing Technology II</b> 13006100 (2 credits)	<b>Prerequisites:</b> Plumbing Technology I <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	

Level 4

Course	Prerequisites   Corequisites	Career Clusters
<b>Practicum in Entrepreneurship*</b> First Time Taken: 13011111 (2 credits)	<b>Prerequisites:</b> None <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> Entrepreneurship I and Entrepreneurship II or successful completion of at least two courses in a CTE program of study <b>Recommended Corequisites:</b> None	

<b>Practicum in Construction Technology*</b> First Time Taken: 13005250 (2 credits) Second Time Taken: 13005260 (2 credits)	<b>Prerequisites:</b> Construction Technology II, Building Maintenance Technology II; Electrical Technology II; Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology II; Plumbing Technology I; or Mill and Cabinetmaking Technology <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
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<b>Practicum in Construction Technology + Extended Practicum in Construction Technology*</b> First Time Taken: 13005255 (3 credits) Second Time Taken: 13005265 (3 credits)	<b>Prerequisites:</b> Construction Technology II, Building Maintenance Technology II; Electrical Technology II; Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology II; Plumbing Technology I; or Mill and Cabinetmaking Technology <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
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# Architecture and Construction Career Cluster

## Statewide Program of Study: Plumbing and Pipefitting

### Course Information

Level 4

Course	Prerequisites   Corequisites	Career Clusters
<b>Career Preparation for Programs of Study*</b> First Time Taken: 12701121 (2 credits)	<b>Prerequisites:</b> At least one Level 2 or higher CTE course <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	
<b>Career Preparation for Programs of Study + Extended Career Preparation*</b> First Time Taken: 12701141 (3 credits)	<b>Prerequisites:</b> At least one Level 2 or higher CTE course <b>Corequisites:</b> None <b>Recommended Prerequisites:</b> None <b>Recommended Corequisites:</b> None	

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