



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



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

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 towards concentrator/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

Aligned 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



Example 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/License

- 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
Principles of Architecture* 13004210 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Principles of Construction* 13004220 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Introduction to Welding 13032250 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

Level 2

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

* 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 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
Pipefitting Technology II N1300426 (1 credit)	Prerequisites: Pipefitting Technology I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Pipefitting Technology Lab II + Pipefitting Technology Lab II N1300428 (2 credits)	Prerequisites: Pipefitting Technology I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Plumbing Technology II 13006100 (2 credits)	Prerequisites: Plumbing Technology I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

Level 4

Course	Prerequisites Corequisites	Career Clusters
Practicum in Construction Technology* First Time Taken: 13005250 (2 credits) Second Time Taken: 13005260 (2 credits)	Prerequisites: 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 Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Practicum in Construction Technology + Extended Practicum in Construction Technology* First Time Taken: 13005255 (3 credits) Second Time Taken: 13005265 (3 credits)	Prerequisites: 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 Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Practicum in Entrepreneurship* First Time Taken: 13011111 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Entrepreneurship I and Entrepreneurship II or successful completion of at least two courses in a CTE program of study Recommended Corequisites: None	

Continued on next page

* 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 or visit <https://tea.texas.gov/cte>



Architecture and Construction Career Cluster

Statewide Program of Study: Plumbing and Pipefitting

Course Information

Level 4

Course	Prerequisites Corequisites	Career Clusters
Practicum in Entrepreneurship + Extended Practicum in Entrepreneurship* First Time Taken: 13011121 (3 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Entrepreneurship I and Entrepreneurship II or successful completion of at least two courses in a CTE program of study Recommended Corequisites: None	
Career Preparation for Programs of Study* First Time Taken: 12701121 (2 credits)	Prerequisites: At least one Level 2 or higher CTE course Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Career Preparation for Programs of Study + Extended Career Preparation* First Time Taken: 12701141 (3 credits)	Prerequisites: At least one Level 2 or higher CTE course Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

* 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 or visit <https://tea.texas.gov/cte>



[LEA name] does not discriminate on the basis of race, color, national origin, sex, or disability in its programs or activities and provides equal access to the Boy Scouts and other designated youth groups. The following person has been designated to handle inquiries regarding the nondiscrimination policies: [title], [address], [telephone number], [email]. Further nondiscrimination information can be found at [Notification of Nondiscrimination in Career and Technical Education Programs](#).