



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: 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.

Offered to: LMHS and TCHS at the Industrial Trades Center



Secondary Courses for High School Credit

- | | |
|----------------|---|
| Level 1 | <ul style="list-style-type: none"> Principles of Construction |
| Level 2 | <ul style="list-style-type: none"> Pipefitting Technology I + Pipefitting Technology Lab I |
| Level 3 | <ul style="list-style-type: none"> Pipefitting Technology II + Pipefitting Technology Lab II (Required) Applied Mathematics for Technical Professionals (Recommended) |
| Level 4 | <ul style="list-style-type: none"> Practicum in Construction Technology |

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

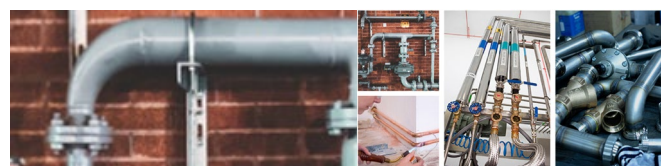
- Complete a pre-apprenticeship in plumbing or pipefitting to develop skills in assembling, installing, and repairing pipes
- Shadow a plumber who is repairing and drainage systems

Expanded Learning Opportunities

- Participate in Houston Livestock Show and Rodeo ICC
- Tour apprenticeship programs

Aligned Industry-Based Certifications

- NCCER Core
- NCCER Pipefitting Level I
- NCCER Pipefitting Level II



Example Postsecondary Opportunities

Apprenticeships

- 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>



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Statewide Program of Study: *Pipefitting*

Course Information

Level 1

Course	Prerequisites Corequisites	Local Course #
Principles of Construction 13004220 (1 credit)	Prerequisites: None Corequisites: None Required: Drug testing is mandatory for this course	7865
<p>Principles of Construction is intended to provide an introduction and lay a solid foundation for those students entering the construction or craft skilled areas. The course provides a strong knowledge of construction safety, construction mathematics, and common hand and power tools. This course also provides communication and occupation skills to assist the student in obtaining and maintaining employment. Students will be required to purchase boots.</p>		

Level 2

Course	Prerequisites Corequisites	Local Course #
Pipefitting Technology I/Lab N1300427 (2 credits)	Prerequisites: Algebra I Corequisites: None Required: Drug testing is mandatory for this course	7874
<p>Students will learn the types of work performed, responsibilities and career opportunities within the industry, and safety principles associated with pipefitting. Additionally, students will learn care, selection, and use of hand and power tools of the trade and ladder and scaffold safety, selection, construction, and the associated hazards. Oxyfuel cutting and associated safety procedures will be reinforced. Students will learn the maintenance, operation, and safety of motorized equipment. Students will be required to purchase boots.</p>		

Level 3

Course	Prerequisites Corequisites	Local Course #
Pipefitting Technology II/Lab N1300428 (2 credits)	Prerequisites: Pipefitting Technology I/Lab Corequisites: None Recommended Corequisite: Applied Mathematics for Technical Professionals Required: Drug testing is mandatory for this course	7875
<p>Students will learn about, be able to identify and install various types of piping systems and valves. Students will learn to read detail and drawing sheets and how to use mathematics to solve problems related to Pipefitting construction. Students will also be educated in how to prepare, fabricate, and assemble threaded pipe, socket weld, and butt weld installations. Excavating per Occupational Safety and Health Administration (OSHA) standards as well as grading and elevations of trenching and backfilling will also be taught. Students will be required to purchase boots.</p>		
Applied Mathematics for Technical Professionals 12701410 (1 credit)	Prerequisites: Construction Technology I Corequisites: None Recommended Corequisite: Pipefitting Technology II/Lab	7925
<p>Applied Mathematics for Technical Professionals uses problem-solving situations, hands-on activities, and technology to extend mathematical thinking and engage student reasoning. Situations relating to technical applications provide students opportunities to make connections with mathematics and the workplace. In addition, students will learn the skills necessary to communicate using mathematics. Hands-on activities will allow students to model, explore, and develop abstract concepts applicable to technical careers.</p>		

Level 4

Course	Prerequisites Corequisites	Local Course #
Practicum in Construction Technology 13005250 (2 credits)	Prerequisites: Pipefitting Technology II/Lab Corequisites: None Required: Drug testing is mandatory for this course	7848
<p>Practicum in Construction Technology is an occupationally specific course designed to provide classroom technical instruction or on-the-job training experiences. Safety and career opportunities are included in addition to work ethics and job-related study in the classroom. Students will be required to purchase boots.</p>		

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