



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 architects, carpenters, and construction managers to electricians, plumbers and heating, air conditioning and refrigeration technicians.

Statewide Program of Study: HVAC and Sheet Metal

The HVAC and Sheet Metal program of study focuses on occupational and educational opportunities associated with installing, servicing, or repairing heating and air conditioning systems. The program of study addresses fabrication, assembly, installation, and repair of sheet metal products and equipment, such as ducts, control boxes, drainpipes, and furnace casings.



Secondary Courses for High School Credit

- | | |
|----------------|--|
| Level 1 | <ul style="list-style-type: none"> Principles of Architecture Principles of Construction |
| Level 2 | <ul style="list-style-type: none"> Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology I Building Maintenance Technology I Entrepreneurship I |
| Level 3 | <ul style="list-style-type: none"> Sheet Metal Technology Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration 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 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 toward Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> Participate in a pre-apprenticeship in HVAC and refrigeration Intern with an HVAC company to practice installing and repairing heating and cooling systems
Expanded Learning Opportunities	<ul style="list-style-type: none"> Job shadow an HVAC technician or cost estimator Participate in SkillsUSA

Industry-Based Certifications

- Employment Ready Certification - Air Conditioning (PACT), Heating, Ventilation and Air Conditioning
- Employment Ready Certification - Electrical Heating, Electrical, and Air Conditioning Technology (H.E.A.T.)
- Employment Ready Certification - Gas Heat NCCER Construction Technology Certification Level I
- Employment Ready Certification - Heat Pumps NCCER Core
- Employment Ready Certification - Light Commercial Air Conditioning NCCER Heating, Ventilation, Air Conditioning Level I
- HBI Pre-Apprenticeship Certificate Training (PACT), Core NCCER Sheet Metal Level I
- HBI Pre-Apprenticeship Certificate Training Refrigerant Handling (EPA 608)



Postsecondary Opportunities

Apprenticeships

- Heating and Air Conditioning Installer

Associate Degrees

- Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology
- Construction Site Management
- Property Maintenance
- Sheet Metal Technology/Sheetworking

Bachelor's Degrees

- Construction Engineering
- Construction Management
- Building/Construction Site Management
- Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology

Master's, Doctoral, and Professional Degrees

- Construction Engineering
- Construction Management

Example Aligned Occupations



Helpers—Installation, Maintenance, and Repair Workers

Median Wage: \$33,348
Annual Openings: 2,366
10-Year Growth: 22%

Heating, Air Conditioning, and Refrigeration Mechanics and Installers

Median Wage: \$48,722
Annual Openings: 3,719
10-Year Growth: 21%

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: HVAC and Sheet Metal

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	

Level 2

Course	Prerequisites Corequisites	Career Clusters
Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology I 13005800 (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: Algebra I, Geometry, and 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	

Level 3

Course	Prerequisites Corequisites	Career Clusters
Sheet Metal Technology N1300430 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Algebra I, Geometry, Introduction to Manufacturing, Principles of Construction, or Construction Technology I Recommended Corequisites: None	
Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology II 13005900 (2 credits)	Prerequisites: Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology I Corequisites: None Recommended Prerequisites: Principles of Architecture, Principles of Construction, or Construction Technology I 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>



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Statewide Program of Study: HVAC and Sheet Metal

Course Information

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	
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	

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