



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	- Principles of Architecture - Principles of Construction
Level 2	- Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology I - Building Maintenance Technology I - Entrepreneurship I
Level 3	- Sheet Metal Technology - Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology II
Level 4	- 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

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	- 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	- Job shadow an HVAC technician or cost estimator - Participate in SkillsUSA

Aligned Industry-Based Certifications

- Construction Technology Certification Level I
- Core
- Employment Ready Certification - Air Conditioning
- Employment Ready Certification - Electrical
- Employment Ready Certification - Gas Heat
- Employment Ready Certification - Heat Pumps
- Employment Ready Certification - Light Commercial Air Conditioning
- HBI Pre-Apprenticeship Certificate Training (PACT), Core
- HBI Pre-Apprenticeship Certificate Training (PACT), Heating, Ventilation and Air Conditioning
- HVAC Support Technician Certificate
- HVACR Level I
- Sheet Metal Level I



Example 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: \$34,574
Annual Openings: 2,061
10-Year Growth: 22%

Heating, Air Conditioning, and Refrigeration Mechanics and Installers

Median Wage: \$50,195
Annual Openings: 3,519
10-Year Growth: 21%

Construction Managers

Median Wage: \$98,294
Annual Openings: 5,403
10-Year Growth: 24%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/20240



For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/ac-hvac-extended.pdf>



Architecture and Construction Career Cluster

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: 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	

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* Indicates course is included in more than one program of study in this career cluster.

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: HVAC and Sheet Metal

Course Information

Level 3

Course	Prerequisites Corequisites	Career Clusters
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 or Principles of Construction 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	
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	

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Course Information

Level 4

Course	Prerequisites Corequisites	Career Clusters
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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