



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 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

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|--------------------|--|
| Dual Credit | Dual credit offerings will vary by local education agency. |
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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

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|--|---|
| 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 |

Aligned Industry-Based Certifications

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|--|--|
| <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> HBI Pre-Apprenticeship Certificate Training (PACT), Heating, Ventilation and Air Conditioning Heating, Electrical, and Air Conditioning Technology (H.E.A.T.) NCCER Construction Technology Certification Level I NCCER Core NCCER Heating, Ventilation, Air Conditioning Level I NCCER Sheet Metal Level I Refrigerant Handling (EPA 608) |
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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: \$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 | |

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



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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, Principles of Construction, or Construction Technology I 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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