



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: HVAC and Sheet Metal Endorsement: Business and Industry

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.

These courses are dual-credit (college) level and taught at **Texas State Technical College in Red Oak**. Transportation and certain costs associated with the program are covered for all students by Midlothian Independent School District.



HVAC and Sheet Metal Course Sequence

	Course	Prerequisites Corequisites
11 th grade	Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology I FALL, 1 credit, 3 class periods	MISD and TSTC Prerequisites: 11th grade. Student must be on target for credits towards graduation, in good academic standing, and have no attendance issues.
	Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology II SPRING, 2 credits, 3 class periods	MISD and TSTC Prerequisites: 11th grade Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology I
12 th grade	Practicum in Construction Technology 1st and 2nd time taken FALL, 2 credits, 3 class periods SPRING, 2 credits, 3 class periods	MISD and TSTC Prerequisites: 12th grade Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology II
	Industry Based Certification	TSTC Red Oak Program Completion Certification

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

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%

To earn the HVAC and Sheet Metal and Business and Industry Endorsement, students must complete the entire Red Oak Program.

1. A student can be removed from the program if they do not meet attendance and/or academic requirements.

HVAC and Sheet Metal

BUSINESS & INDUSTRY ENDORSEMENT



An example of a four-year plan for a student entering 9th grade to complete the HVAC and Sheet Metal Program of Study.

NOTE: this program can begin in the 10th or 11th grade.

9th	10th	11th	12th
English 1	English 2	3 rd Math	Advanced English
Algebra 1	English 3	4 th Science	4 th Math
Biology	Geometry	US History	Govt./Econ.
World Geography	IPC or Chemistry	Lunch and travel time to TSTC Red Oak	
Fine Arts	3 rd Science	Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology I - FALL Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology II - SPRING	Practicum in Construction Technology 1st and 2nd time taken ALL YEAR
Physical Education	World History		
Foreign Language	Foreign Language		

Industry Based Certifications
TSTC Red Oak Program Completion Certification

Related CTE Elective Courses
<ul style="list-style-type: none"> None - no room in student schedule

Program of Study Planning
<ul style="list-style-type: none"> To complete this Program of Study, a student must double down on English and Science credits their 10th grade year to make room for TSTC courses in the 11th and 12th grade. A student must be positive that this Program of Study is what they wish to complete because of the differences in their English and Science courses taken and time devoted in their 11th and 12th grade years. Students in this particular Program of Study will have no room for extracurricular activities, unless they speak individually with teachers, but those classes will not appear on their schedule.