

Architecture and Construction Career Cluster

The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment. Principles of Architecture provides an overview to the various fields of architecture, interior design, and construction management.

HVAC and Sheet Metal Statewide Program of Study



The HVAC and Sheet Metal program of study explores the occupations and educational opportunities associated with installing, serving, or repairing heating and air conditioning systems and also the fabrication, assembly, installation, and repair of sheet metal products and equipment, such as ducts, control boxes, drainpipes, and furnace casings. This program of study may also include exploration into preparing cost estimates for certain construction projects involving heating and air conditioning and sheet metal.

Secondary Courses for High School Credit

Level 1

- Principles of Construction

Level 2

- Heating, Ventilation Air Conditioning (HVAC) and Refrigeration Technology I Dual Credit

Level 3

- Heating, Ventilation Air Conditioning (HVAC) and Refrigeration Technology II Dual Credit

Level 4

- Heating, Ventilation Air Conditioning (HVAC) and Refrigeration Technology III Dual Credit

Postsecondary Opportunities

Level I Certificate from SWTJC upon successful completion of program of study

Associates Degrees

- Heating, Ventilation, Air Conditioning and Refrigeration Engineering Technology/ Technician

Bachelor's Degrees

- Business Administration and Management
- Mechanical Engineering
- Construction Engineering Technology/ Technician
- Business/ Commerce, General

Master's, Doctoral, and Professional Degrees

- Business Administration and Management
- Mechanical Engineering
- Construction Engineering
- Business/Commerce, General

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in SkillsUSA

Work-Based Learning Activities

- Intern with an HVAC company

Industry-Based Certifications

- NCCER Core
- NCCER Heating, Ventilation, Air Conditioning Level I
- Refrigerant Handling (EPA 608)



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Heating, Air Conditioning, and Refrigeration Mechanics	\$41,808	3,356	26%
Sheet Metal Workers	\$37,419	1,479	17%
Cost Estimators	\$63,939	2,239	21%

Successful completion of the HVAC and Sheet Metal program of study will fulfill requirements of the Business and Industry endorsement. Revised – August 2022

COURSE INFORMATION

COURSE NAME	COURSE NUMBER AND CREDITS	PREREQUISITES (PREQ) COREQUISITES (CREQ)	GRADE
Principles of Construction	8410CC (1 credit)	None	9-10
HVAC I Dual Credit	8426-6 and 8426DC (1 credit)	Principles of Construction	10-11
HVAC II Dual Credit	8427-6 (2 credits)	HVAC I	11-12
HVAC III Dual Credit	8428-6 and 8428DC (3 credits)	HVAC II	12

COURSE DESCRIPTIONS

Principles of Construction:

This course helps build foundation skills in construction. Jobsite safety, construction math, hand tools and power tools training coupled with communication and employability skills provide an excellent opportunity and insight into the career paths of the construction industry.

HVAC I Dual Credit:

College Credit: CETT 1302

Students gain knowledge and skills specific to those needed to enter the industry as technicians in the HVAC and refrigeration industry or building maintenance technician or supervisor or prepare for a postsecondary degree. Students acquire knowledge and skills in safety, principles of HVAC theory, tools, codes, and installation of HVAC and refrigeration equipment.

HVAC II Dual Credit:

College Credits: HART 1407 & MAIR 1449

Students gain advanced knowledge and skills specific to those needed to enter the industry as HVAC and refrigeration technicians or building maintenance technicians or supervisors or prepare for a postsecondary degree. Students acquire knowledge and skills in safety, electrical theory, tools, codes, installation of commercial HVAC equipment, heat pumps, troubleshooting techniques, various duct systems, and maintenance practices.

HVAC III Dual Credit:

College Credits: HART 1403, 1441 , & 2438

This 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.

Courses in yellow are advanced courses for endorsement purposes.

