

APPRENTICESHIP - SHEET METAL

Program Description

The Sheet Metal trade is unique as it is one of the few crafts that starts with raw material, creates a component, and installs and maintains the product. Using a combination of mathematics, layout tools, hammers, drills, plasma and laser beam cutting systems, computers, cutting, forming, seaming or welding machines, workers manipulate the material into the product desired. The maintenance sector includes preventive maintenance, repair, testing, balancing, and sometimes certification of the installed systems. Items commonly fabricated and installed include HVAC systems, metal roofs, kitchen hoods, various flashings, gutters, decorative architectural features, and many other items made of a variety of metals. It is an interesting and evolving field with exciting growth potential. The apprenticeship is an earn-while-you-learn program involving paid "full time" work and related classes.

Learn more about the program on the [Apprenticeship website](#).

Program Learning Outcomes

Students are prepared with the skills and expertise to detail, fabricate, and install a variety of sheet metal products in compliance with applicable standards and codes, aiming for optimum environmental and energy efficiency. These highly demanded skills are acquired through on-the-job training and lead to employment in the construction industry. After five years of classroom and work experience students are recognized as journeypersons within the sheet metal industry.

Career Opportunities

Upon completion of all course requirements and 6500 hours of related work experience, graduates will be recognized as specialist in the Sheet Metal Building Trades field. Depending upon the student's career interest and courses taken, graduates may find employment as a: sheet metal worker, site foreperson, superintendent, sheet metal shop fabricator, residential sheet metal journeyperson, sheet metal building inspector, welding inspector, sheet metal apprenticeship instructor, sheet metal detailer, sheet metal contractor, HVAC service technician, sheet metal ship yard worker, air conditioning specialist, or decking and siding.

Award Type(s)

- AS = Associate in Science Degree
- CA = Certificate of Achievement
- CCC = Career Certificate [Non-Transcriptable]

Units Required

- Major: 64.5-66.5
- Certificate(s): 6-66.5

Associate Degree Requirements

Code	Title	Units
English Proficiency		
Select one of the following:		
ENGL 1A	COMPOSITION & READING	5
ENGL 1AH	HONORS COMPOSITION & READING	5

ESLL 26	ADVANCED COMPOSITION & READING	5
or equivalent		
Ethnic Studies		
Any course in the ETHN (Ethnic Studies) subject code, currently approved for Area F of CSU GE and Area 7 of IGETC		
Mathematics Proficiency		
College-level math course at or above the level of Intermediate Algebra		

A minimum of 90 units is required¹ to include:

- Completion of one of the following general education patterns: Foothill General Education, CSU General Education Breadth Requirements or the Intersegmental General Education Transfer Curriculum (IGETC)
- Core courses (57 units)
- Support courses (7.5-9.5 units)

¹ Additional elective course work may be necessary to meet the 90-unit minimum requirement for the associate degree.

Note: All courses pertaining to the major must be taken for a letter grade. In addition, a grade of "C" or better is required for all core and support courses used for the degree or certificate.

Core and Support Courses

Code	Title	Units
Core Courses		
APSM 101	SMQ-1 TRADE INTRODUCTION	3
APSM 102	SMQ-2 CERTIFIED SAFETY & BEGINNING TRADE MATH	3
APSM 103	SMQ-3 SHEET METAL TOOLS & SHOP	1.5
APSM 104	SMQ-4 SOLDERING & COMMON SEAMS	2
APSM 105	SMQ-5 DRAFTING INTRODUCTION & VIEWS	2.5
APSM 106	SMQ-6 BEGINNING DUCT FITTINGS	1.5
APSM 107	SMQ-7 PARALLEL LINE FITTINGS	1.5
APSM 108	SMQ-8 TRIANGULATION FITTINGS	1.5
APSM 109	SMQ-9 RADIAL LINE LAY OUT & OGEE OFFSETS	1.5
APSM 110	SMQ-10 BASICS OF ARCHITECTURAL SHEET METAL	2
APSM 111	SMQ-11 ARCHITECTURAL SHEET METAL	1.5
APSM 112	SMQ-12 FIELD INSTALLATION	2
APSM 113	SMQ-13 WELDING 1: PROCESS & SAFETY OVERVIEW	1.5
APSM 114	SMQ-14 WELDING 2: GMAW	1.5
APSM 116	SMQ-16 PLANS & SPECIFICATIONS	3
APSM 117	SMQ-17 SUBMITTALS & SHOP DRAWINGS	2.5
APSM 118	SMQ-18 INDUSTRIAL & STAINLESS STEEL INTRODUCTION	1.5
APSM 119	SMQ-19 HVAC AIR SYSTEMS & DUCT DESIGN	3
APSM 122	SMQ-22 CODES & STANDARDS	3
APSM 124	SMQ-24 METAL ROOFING	2
APSM 126	SMQ-26 FOREMAN TRAINING	2.5
APSM 127	SMQ-27 BASIC AUTOCAD	1.5
APSM 128	SMQ-28 HVAC ENERGY CONSERVATION & ENVIRONMENTAL TECHNOLOGY	2.5

APSM 136	SMQ-36 SERVICE BASICS	2
APSM 159A	INTRODUCTION TO TESTING ADJUSTING & BALANCING HVAC SYSTEMS	2.5
APSM 175A	TABB TECHNICIAN CERTIFICATION	2
APSM 177A	TITLE 24 MECHANICAL ACCEPTANCE TESTING	2.5

Support Courses

Select six courses from the following: 7.5-9.5

APSM 120	SMQ-20 MEASURING & SKETCHING
APSM 121	SMQ-21 FABRICATION & SHORTCUTS
APSM 125	SMQ-25 DETAILING
APSM 130	SMQ-30 ADVANCED WELDING
APSM 131	SMQ-31 CAD DETAILING
APSM 132	SMQ-32 INTERMEDIATE CAD DETAILING THIRD PARTY
APSM 133	SMQ-33 ADVANCED ARCHITECTURAL

Total Units 64.5-66.5

Elective Courses

These courses are recommended to fulfill the additional elective requirements to reach 90 units for the degree as they augment the major:

Code	Title	Units
CWE 60A	OCCUPATIONAL WORK EXPERIENCE: APPRENTICE	10.5

Note: Additionally, students who complete the core and support courses will satisfy Foothill GE Area III, Natural Sciences; Area IV, Social & Behavioral Sciences; Area V, Communication & Analytical Thinking; Area VI, United States Cultures & Communities; and Area VII, Lifelong Learning.

Certificate Requirements

Certificate of Achievement in Sheet Metal Building Trades

- Units: 64.5-66.5

The certificate of achievement is awarded upon completion of the core and support courses. General education courses are not required.

Currently offered at: Bay Area Sheet Metal JAC.

Sheet Metal Air Conditioning Specialist Career Certificate

- Units: 6 [Non-Transcriptable]

Code	Title	Units
APPR 188A	ORIENTATION; SAFETY & BEGINNING RESIDENTIAL SHEET METAL INSTALLATION (SPECIALIST 1A)	1.5
APPR 188B	RESIDENTIAL COMPONENTS IDENTIFICATION & INSTALLATION (SPECIALIST 1B)	1.5
APPR 189A	RESIDENTIAL SYSTEMS; DUCT & HVAC SYSTEMS (SPECIALIST 2A)	1.5
APPR 189B	PLANS & ARCHITECTURAL APPLICATIONS FOR RESIDENTIAL SHEET METAL (SPECIALIST 2B)	1.5
Total Units		6

Currently offered at: Bay Area Sheet Metal JAC.