APSM 124: SMQ-24 METAL ROOFING

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	2
Hours:	18 lecture, 22 laboratory per quarter (40 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Sheet Metal Apprenticeship Program.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	None
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- A successful student will be able to install flat seam, standing seam and batten seam roofs.
- A successful student will be able to lay out a roof for penetrations, seam alignment, seam location and flashing.

Description

Overview of the different types of metal roofs used in the sheet metal industry, installation skills, and safety concerns. Common roof seams are fabricated. Use of manufactured and shop-fabricated materials for roof lay out and installation is practiced, including roof penetrations and related flashings.

Course Objectives

The student will be able to:
A. Identify the different types of metal roofs
B. Apply installation methods common to all metal roofs
C. Install commonly-used manufactured metal roofing according to manufacturers' instructions
D. Identify cupolas, spires, and finials
E. Identify the difference between roofing and decking
F. Identify various parts of a roof using trade nomenclature
G. Lay out a roof for penetrations, seam alignment, seam location, and flashings

Course Content

A. Identify the different types of metal roofs
1. Identify flat seam, standing seam, batten, bermuda roofs, mansard roofs, and domes
B. Apply installation methods common to all metal roofs
1. Install flat seam, standing seam, and batten seam roofs
2. Install underlayment and sheet metal flashing required for a metal roof

3. Discuss typical clips, fastener and expansion allowances for metal roofs
C. Install commonly-used manufactured metal roofing according to manufacturers' instructions
1. Non-structural standing-seam systems
2. Structural systems
D. Identify cupolas, spires, and finials
1. Photos of typical installations
2. Describe the functions of these architectural features
E. Identify the difference between roofing and decking
1. Differentiate the purposes of each
2. Resulting designs
F. Identify various parts of a roof using trade nomenclature
1. Structural components
2. Water-proofing components
G. Lay out a roof for penetrations, seam alignment, seam location, and flashings
1. Measuring techniques
2. Identifying allowances

Lab Content

Working together and in teams, students will participate in the following:
A. Demonstration and student practice of metal roofing lay out and proper installation techniques
B. Practice installing different types of metal roofs

Special Facilities and/or Equipment

A. Laboratory with sheet metal tools
B. Personal protective equipment

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Results of written quizzes and tests
Shop participation
Comprehensive written final examination
Comprehensive final project
Evaluation of progress by weekly assignments

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Discussion
Laboratory instruction
Demonstration

Representative Text(s) and Other Materials

International Training Institute. Architectural Sheet Metal, International Training Institute for the Sheet Metal and Air Conditioning Industry Vols. 1 and 2. 2006.

International Training Institute. Residential Architectural Sheet Metal and Roofing, International Training Institute for the Sheet Metal and Air Conditioning Industry (student manual). 2010.

These are the standard Sheet Metal textbooks/workbooks used for this course. Although one or more may not be within 5 years of the required

published date, they are the most current books used when teaching this course.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

A. Reading assignment, in textbook:
1. Read Unit 5, Fasteners
B. Writing assignment, in textbook:
1. Complete review questions for the Unit 5, Fasteners section, page 77

Discipline(s)

Sheet Metal