

APPR 189A: RESIDENTIAL SYSTEMS; DUCT & HVAC SYSTEMS (SPECIALIST 2A)

Foothill College Course Outline of Record

Heading	Value
Units:	1.5
Hours:	6 lecture, 48 laboratory per quarter (54 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Sheet Metal Specialist 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 describe flashing principles and their different applications.
- A successful student will be able to Locate building code requirements for flues, furnaces and other residential HVAC systems.

Description

A study of typical residential sheet metal flashing, waterproofing, ventilation and HVAC systems. Development of installation techniques.

Course Objectives

The student will be able to:

- Discuss and explain flashing principles and their different applications.
- State values of craftsmanship and good customer relations.
- Assess job costs.
- Review building code requirements for flues, furnaces and other residential systems.

Course Content

- Flashing Principles
 - Waterflow, capillary action and waterproofing
 - Joint laps, soldering and caulking
 - Measuring roof pitch and transferring angles
 - Measuring and sketching for fabrication
 - Deck and sill flashings
 - Chimney saddles
 - Fireplace tops
 - Flashing and compound miter projects
- Craftsmanship and Customer Relations
 - Understanding customers
 - Working with other professionals
- Job Costs
 - Job estimating
 - Labor and material costs

- Indirect costs
- Overhead costs
- Flues and Furnaces for Residential Systems
 - Types of flues and furnaces
 - Common residential flues and furnaces
 - Code review

Lab Content

- Practicing safe use of tools and equipment
- Measuring
- Practicing accuracy in layout
- Fabrication of flashing products

Special Facilities and/or Equipment

- Laboratory equipped with sheet metal tools, materials and soldering equipment.

Method(s) of Evaluation

- Results of written quizzes and final exam
- Satisfactory completion of class projects
- Maintenance of a student's workbook with questions drawn from text

Method(s) of Instruction

- Lecture
- Discussion
- Laboratory
- Demonstration

Representative Text(s) and Other Materials

International Training Institute. [Residential HVAC Finish Installer, International Training Institute for the Sheet Metal and Air Conditioning Industry Student Manual](#). Alexandria, VA: International Training Institute for the Sheet Metal and Air Conditioning Industry, 2007.

International Training Institute. [Residential HVAC New Construction Installer, International Training Institute for the Sheet Metal and Air Conditioning Industry Student Manual](#). Alexandria, VA: International Training Institute for the Sheet Metal and Air Conditioning Industry, 2007.

NOTE: 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

- Reading assignment from the International Training Institute Residential HVAC Installer student manual to determine layout and installation of flashing, furnaces and flues.
- Writing assignment from the International Training Institute Residential Residential HVAC Finish Installer to record design and measurements for a particular flashing product.

Discipline(s)

Sheet Metal