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

Course Content

A. Flashing Principles
1. Waterflow, capillary action and waterproofing
2. Joint laps, soldering and caulking
3. Measuring roof pitch and transferring angles
4. Measuring and sketching for fabrication
5. Deck and sill flashings
6. Chimney saddles
7. Fireplace tops
8. Flashing and compound miter projects
B. Craftsmanship and Customer Relations
1. Understanding customers
2. Working with other professionals
C. Job Costs
1. Job estimating
2. Labor and material costs
3. Indirect costs
4. Overhead costs
D. Flues and Furnaces for Residential Systems
1. Types of flues and furnaces
2. Common residential flues and furnaces
3. Code review

Lab Content

A. Practicing safe use of tools and equipment
B. Measuring
C. Practicing accuracy in layout
D. Fabrication of flashing products

Special Facilities and/or Equipment

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

Method(s) of Evaluation

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

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

Method(s) of Instruction

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

A. Lecture
B. Discussion
C. Laboratory
D. 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

A. Reading assignment from the International Training Institute Residential HVAC Installer student manual to determine layout and installation of flashing, furnaces and flues.

B. 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