

# APSM 174C: FIRE LIFE SAFETY LEVEL 1

## Foothill College Course Outline of Record

Heading	Value
<b>Effective Term:</b>	Summer 2022
<b>Units:</b>	2.5
<b>Hours:</b>	32 lecture, 8 laboratory per quarter (40 total per quarter)
<b>Prerequisite:</b>	Per California Code of Regulations, this course is limited to students admitted to the Sheet Metal Apprenticeship Program.
<b>Degree &amp; Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

## Student Learning Outcomes

- A successful student will be able to identify codes and standards used in fire life safety.
- A successful student will be able to identify improper installation of fire dampers

## Description

Students will gain an overview of various types of fire dampers used in HVAC systems. Upon completion, students will be able to perform fire damper operational tests and inspections.

## Course Objectives

The student will be able to:

1. Describe fire life safety objectives and basic functions
2. Describe the role of construction documents, building authorities and designers
3. Identify codes and standards used in fire life safety
4. Discuss basic fire damper testing procedures and ratings
5. Define building construction classifications
6. Define wall assembly construction classifications
7. Identify different fire damper types and various accessories
8. Describe relevant fire damper testing standards and their applications
9. Describe proper installation procedures of various damper types
10. Identify improper installation of fire dampers
11. Describe required testing and inspections for fire life safety systems and components
12. Identify common fire life safety symbols used in HVAC drawings

## Course Content

1. Describe fire life safety objectives and basic functions
  - a. Describe the function of basic components in a fire life safety system (Lec)

2. Describe the role of construction documents, building authorities and designers
  - a. Describe the common construction documents impacted in FLS systems (Lec)
  - b. Describe the role of building and fire officials (Lec)
  - c. Describe the role of architects, HVAC designers and installers (Lec)
3. Identify codes and standards used in fire life safety
  - a. Discuss the various codes impacting a FLS system (Lec)
  - b. Define the difference between a code and a standard (Lec)
  - c. Define the standards that impact a FLS system (Lec)
4. Discuss basic fire damper testing procedures and ratings
  - a. Describe the UL testing procedures used on fire dampers (Lec)
  - b. Describe the UL rating requirements used on fire dampers (Lec)
5. Define building construction classifications
  - a. Define the five types of building construction classifications defined by the IBC (Lec)
6. Define wall assembly construction classifications
  - a. Define four types of wall assembly classifications defined by the IBC (Lec and Lab)
7. Identify different fire damper types and various accessories
  - a. Identify the five basic types of fire dampers (Lec and Lab)
  - b. Identify fire damper accessories (Lec and Lab)
8. Describe relevant fire damper testing standards and their applications
  - a. Define the UL fire damper test standards and their application (Lec)
  - b. Identify the individual tests within the UL 555 test standards (Lec)
9. Describe proper installation procedures of various damper types
  - a. Describe proper installation factors and procedures of various damper types (Lec and Lab)
10. Identify improper installation of fire dampers (Lec and Lab)
  - a. Identify improper installation factors of fire dampers (Lec and Lab)
11. Describe required testing and inspections for fire life safety systems and components
  - a. Describe common requirements of commissioning, component and system operational testing (Lec)
  - b. Describe NFPA testing and manufacturers testing requirements (Lec)
12. Identify common fire life safety symbols used in HVAC drawings
  - a. Identify commonly used drawing symbols recommended by SMACNA (Lec)

## Lab Content

1. Perform an inspection of fire dampers as assigned in the lab, and document results

## Special Facilities and/or Equipment

1. Laboratory with sheet metal test and balance tools and sample system components
2. Personal protective equipment
3. When taught via Foothill Global Access, on-going access to computer with email software and hardware; email address

## Method(s) of Evaluation

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

Results of written quizzes and tests  
Responses in class discussions  
Comprehensive written final examination

## Method(s) of Instruction

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

Lecture  
Discussion  
Demonstration  
Lab assignments followed by discussion

## Representative Text(s) and Other Materials

International Training Institute for the Sheet Metal and Air Conditioning Industry. HVAC Fire Life Safety Level 1 Technician, Student Reference Manual. 2010.

International Training Institute for the Sheet Metal and Air Conditioning Industry. Testing, Adjusting & Balancing of Environment Systems. 2003.

These are the standard sheet metal textbooks/workbooks used for this course. Although one or more may not be within five 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

1. Sample reading assignment: From the textbook, the section on Code Authorities
2. Sample writing assignment: Describe the UL rating requirements used on fire dampers

## Discipline(s)

Sheet Metal