APSM 175C: FIRE LIFE SAFETY LEVEL 2

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2022
Units:	2.5
Hours:	32 lecture, 8 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 describe the objectives and differences in smoke control and smoke management systems.
- A successful student will be able to describe the testing and commissioning process of a smoke control system.

Description

Students will become familiar with the building codes that govern fire life safety systems. Upon completion, students will be able to test a fire life safety system and achieve ICB FLS Level 2 certification.

Course Objectives

The student will be able to:

a. Describe the objectives of smoke control and smoke management systems
b. Identify the building codes that govern fire life safety
c. Describe procedures and standards used in fire damper testing
d. Describe building types and occupancy classifications
e. Describe the objectives and differences in smoke control and smoke management systems
f. Describe active and passive methods in smoke control and smoke management
g. Describe the properties and toxic components in smoke
h. Describe the features in smoke control systems
i. Identify the components of a smoke control system
j. Describe a sequence of operation in a smoke control system
k. Describe the testing and commissioning process of a smoke control system
l. Describe the procedures and equipment used in testing smoke control systems

Course Content

a. Describe the objectives of smoke control and smoke management systems
    i. Describe the three main objectives of smoke control and smoke management systems (Lec)
b. Identify the building codes that govern fire life safety (Lec and Lab)
c. Describe procedures and standards used in fire damper testing
    i. Describe five organizations that contribute to codes used in fire life safety (Lec)
    ii. Describe three organizations that develop standards used in fire life safety (Lec)
    iii. Describe the UL standards and labeling requirements for fire dampers (Lec)
d. Describe building types and occupancy classifications
    i. Describe the IBC building type classifications (Lec)
    ii. Describe the IBC building occupancy classifications (Lec)
e. Describe the objectives and differences in smoke control and smoke management systems
    i. Describe the functional objectives of smoke control and smoke management systems (Lec)
    ii. Describe the dedicated and non-dedicated smoke control and smoke management systems (Lec)
f. Describe active and passive methods in smoke control and smoke management
    i. Describe four active smoke control methods (Lec)
    ii. Describe two passive smoke control methods (Lec)
g. Describe the properties and toxic components in smoke
    i. Describe the three phases of fire growth (Lec)
    ii. Describe the toxic components of smoke (Lec)
h. Describe the features in smoke control systems
    i. Describe fire and smoke barriers in a building (Lec)
    ii. Describe smoke pressurization systems (Lec)
    iii. Describe natural conditions impacting smoke pressurization (Lec)
i. Identify the components of a smoke control system
    i. Identify common components required in a smoke control system (Lec and Lab)
j. Describe a sequence of operation in a smoke control system
    i. Compose a sequence of operation for a smoke control system (Lec and Lab)
k. Describe the acceptance testing and commissioning process for smoke control systems (Lec)
l. Describe the procedures and equipment used in testing smoke control systems
    i. Identify equipment and its use in testing of smoke control systems (Lec and Lab)

Lab Content

a. Perform an inspection and operational test of a fire-smoke damper system

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 certification examination
Demonstration of assigned skills to acceptable level per instructor

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. Testing, Adjusting & Balancing of Environment Systems. 2003.

International Training Institute for the Sheet Metal and Air Conditioning Industry. HVAC Fire Life Safety Level 2 Technician, Student Reference Manual. 2011.

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

a. Sample reading assignment: From the textbook, assigned sections on Fire Life Safety Level 2
b. Sample writing assignment: Describe the acceptance testing and commissioning process for smoke control systems
c. Complete technician certification online testing

Discipline(s)

Sheet Metal