

# EASTERN ARIZONA COLLEGE

## Fire Protection Systems

Course Design

2019-2020

### Course Information

**Division** Allied Health  
**Course Number** FSC 140  
**Title** Fire Protection Systems  
**Credits** 3  
**Developed by** Martin deMasi  
**Lecture/Lab Ratio** 3 Lecture/0 Lab

### Transfer Status

ASU	NAU	UA
Non Transferable	Elective Credit	Non Transferable

**Activity Course** No  
**CIP Code** 43.0203  
**Assessment Mode** Pre/Post Test (50 Questions/50 Points)  
**Semester Taught** Upon Request  
**GE Category** None  
**Separate Lab** No  
**Awareness Course** No  
**Intensive Writing Course** No  
**Diversity and Inclusion Course** No

### Prerequisites

None

### Educational Value

This course is designed for firefighters and those students who want to have a basic understanding of fire protections systems.

### Description

This course provides information relating to the features of design and operation of fire alarm systems, water based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers.

### Supplies

Fire extinguisher training prop

## **Competencies and Performance Standards**

### **1. Identify the types, uses, and benefits of fire protection systems found in various types of structures.**

#### **Learning objectives**

*What you will learn as you master the competency:*

- a. Identify and describe the types of fire protection systems used in structures.
- b. Describe the benefits of various fire protection systems.
- c. Explain how fire protection systems provide life safety and property protection.

#### **Performance Standards**

*Competence will be demonstrated:*

- o in completion of the assignment sheet

*Performance will be satisfactory when:*

- o learner participates in class activities and discussions
- o learner provides acceptable verbal and written responses to questions

### **2. Summarize the basic elements of a public water system as it relates to fire protection systems.**

#### **Learning objectives**

*What you will learn as you master the competency:*

- a. Describe the basic purposes of a public water system.
- b. List the sources of water for a public water system.
- c. Describe a typical water distribution system in a community.
- d. Identify the major components of a public water system.
- e. Describe various water storage methods for a public water system.

#### **Performance Standards**

*Competence will be demonstrated:*

- o in completion of the assignment sheet

*Criteria - Performance will be satisfactory when:*

- o learner participates in class discussions and activities
- o learner provides acceptable verbal and written responses to questions

### **3. Explain the operations and appropriate application for different types of portable fire protection systems.**

#### **Learning objectives**

*What you will learn as you master the competency:*

- a. Explain the characteristics of each of the four classes of fires and how they differ.
- b. Describe the fire extinguisher fire rating system.
- c. Describe common fire extinguishing agents and their application.
- d. Demonstrate the use of one type of portable fire extinguisher.

#### **Performance Standards**

*Competence will be demonstrated:*

- o in completion of the assignment sheet

*Criteria - Performance will be satisfactory when:*

- learner participates in class discussions and activities
- learner provides acceptable verbal and written responses to questions

**4. Identify the different types and components of sprinkler, standpipe, and foam systems.**

***Learning objectives***

*What you will learn as you master the competency:*

- a. Identify the basic components of a fire sprinkler system.
- b. Describe the differences between wet, dry, pre-action and deluge fire sprinkler systems.
- c. Identify the basic components of a standpipe system.
- d. Describe the differences between the three classes of sprinkler systems.
- e. Describe the testing, inspection and maintenance of fire sprinkler and standpipe systems.
- f. Explain the use of foam systems for fire protection.

***Performance Standards***

*Competence will be demonstrated:*

- in completion of the assignment sheet

*Criteria - Performance will be satisfactory when:*

- learner participates in class discussions and activities
- learner provides acceptable verbal and written responses to questions

**5. Discuss residential and commercial sprinkler legislation.**

***Learning objectives***

*What you will learn as you master the competency:*

- a. Describe the basic sprinkler requirements as referenced in the International Fire Code.
- b. Discuss the benefits of residential and commercial sprinklers.
- c. Compare the requirements for sprinkler systems as referenced in NFPA Standards 13, 13R and 13D.
- d. List several organizations that promote the installation of residential sprinklers.
- e. Examine the arguments against requiring residential sprinklers.

***Performance Standards***

*Competence will be demonstrated:*

- in completion of the assignment sheet

*Criteria - Performance will be satisfactory when:*

- learner participates in class discussions and activities
- learner provides acceptable verbal and written responses to questions

**6. Compare the basic components and detectors in a fire alarm system.**

***Learning objectives***

*What you will learn as you master the competency:*

- a. Identify the basic components of a fire alarm system.
- b. Describe the how a fire alarm system operates.

- c. Describe the different types of detectors used in fire alarm systems.
- d. Describe the various alerting components used with fire alarm systems.
- e. Explain the various types of monitoring methods used in fire alarm systems.
- f. Describe the testing, inspection and maintenance of fire alarm systems.

**Performance Standards**

*Competence will be demonstrated:*

- o in completion of the assignment sheet

*Criteria - Performance will be satisfactory when:*

- o learner participates in class discussions and activities
- o learner provides acceptable verbal and written responses to questions

**7. Describe the hazards of smoke and list the four factors that can influence smoke movement in a building.**

**Learning objectives**

*What you will learn as you master the competency:*

- a. List the hazards of smoke and other products of combustion.
- b. Discuss the differences in the products of combustion between legacy and modern building materials and contents.
- c. Describe the factors that affect how smoke can move through a building.
- d. Describe the various types of smoke management systems.
- e. Explain how firefighters can use smoke management systems during incident operations.

**Performance Standards**

*Competence will be demonstrated:*

- o in completion of the assignment sheet

*Criteria - Performance will be satisfactory when:*

- o learner participates in class discussions and activities
- o learner provides acceptable verbal and written responses to questions

**Types of Instruction**

Classroom presentation and activities

**Grading Information**

**Grading Rationale**

A pretest may be administered at the beginning of the course, which will not count as part of the final grade. The final written exam (post-test) will count as 15% of the final grade. The chapter tests will count as 50% of the final course grade. Participation, activities, and assignments will count as 35% of the final grade.

**Grading Scale**

A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	Below 60%