Course Outline

2026-2027 Catalog

FSC 14 - Fire Protection Equipment and Systems

Catalog Description

Transfer Status: CSU

Unit(s): 3.00

Lecture: 51.00 Contact hours/102.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

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Course Description: This course provides information relating to the features of design and operation of fire alarm systems, water-based suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers. (C-ID FIRE 120X).

Objectives

Upon successful completion of this course, the student should be able to:

1. Identify and describe various types and uses of fire protection systems.
2. Describe the basic elements of a public water supply system as it relates to fire protection.
3. Explain the benefits of fire protection systems in various types of structures.
4. Describe the basic elements of public water supply systems, including sources, distribution networks, piping and hydrants.
5. Explain why water is a commonly used extinguishing agent.
6. Identify the different types and components of sprinkler, standpipe and foam systems.
7. Review residential and commercial sprinkler legislation.
8. Identify the different types of non-water-based fire suppression systems.
9. Explain the basic components of a fire alarm system.
10. Identify the different types of detectors and explain how they detect fire.
11. Describe the hazards of smoke, and list the four factors that can influence smoke movement in a building.
12. Discuss the appropriate application of fire protection systems.
13. Explain the operation and appropriate application for the different types of portable fire protection systems.

Course Content

Topic Titles / Suggested Time Topic

Lecture

Topics	Lec Hrs
Introduction to Fire Protection Systems	10.00
Water Supply Systems for Fire Protection Systems	8.00
Water-Based Fire Suppression Systems	8.00
Non-Water-Based Fire Suppression Systems	6.00
Fire Alarm Systems	4.00
Smoke Management Systems	8.00
Portable Fire Extinguishers	7.00
Total Hours:	**51.00**

Methods of Instruction

A. Demonstrations
B. Discussion
C. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
D. Lecture
E. Multimedia Presentations

Methods of Evaluation

A. Exams/Tests
B. Homework
C. Class participation
D. Written Assignments

Examples of Assignments

Reading Assignments

1. Read an article about an historic municipal fire where there were no fire protection systems in place. Be prepared to discuss protection system flaws in class.
2. Read the textbook chapter on detection systems, and be prepared to discuss the proper application of systems in class.

Writing Assignments

1. Write a minimum two page report about a historic municipal fire, and describe the impact of the presence or absence of a fire protection system.
2. Prepare a consise reference sheet with mathematical formulas for calculating hydraulic equations.

Out-of-Class Assignments

1. Prepare a Power Point presentation regarding the importance of fire protection systems, and be prepared to present and discuss in class.
2. Participate in a ride-along with a fire inspector, inspect a building and locate and identify the fire protection systems it has. Be prepared to describe your experience in class.

Recommended Materials of Instruction

IFSTA. (2016). Fire Detection and Suppression Systems. *IFSTA, 5th.*

IFSTA. (2006). Pumping Apparatus Driver/Operator Handbook. *IFSTA, 2nd.*

Other Learning Materials

Handouts

Audiovisual

Minimum Qualifications

Fire Technology

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