Course Description

Provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection and portable fire extinguishers. Lecture 3 hours per week.

General Course Purpose

To provide students with an understanding of the operation and design of fire protection systems.

Course Prerequisites or Corequisites

Prerequisites: MTH 151 or higher, FST 100, FST 110, and FST 115

Course Objectives

By the end of this course a successful student will be able to:

- Explain the benefits of fire protection systems in various types of structures.
- Describe the basic elements of a public water supply system including sources, distribution networks, piping and hydrants.
- Explain why water is a widely used extinguishing agent and describe how water extinguishes fires.
- Identify the different types and components of sprinkler, standpipe and foam systems.
- Define the benefits of residential sprinkler legislation.
- Identify five different types of non-water based fire suppression systems and describe how these systems extinguish fire.
- Describe the basic components of a fire alarm system.
- Identify 3 types of detectors and explain how they detect fire.
- Describe the hazards of smoke and list the four factors that can influence smoke movement in a building.
- Recognize the appropriate application of the different types of fire sprinklers.
- Explain the operation and appropriate application of the different types of portable fire extinguishing systems.
- Identify and analyze the causes involved in the line-of-duty firefighter deaths related to structural and wildland firefighting, training and research and the reduction of emergency risks and accidents.

Major Topics to be Included

- Introduction to Fire Protection Systems
- Water Supply Systems for Fire Protection Systems
- Water-based Fire Suppression Systems
- Non-water-based Fire Suppression Systems
- Fire Alarm Systems
- Smoke Management Systems
- Portable Fire Extinguisher