



Course Description

FFP1505 | Fire Prevention Practices | 3.00 credits

The purpose of this course is to place emphasis on fire prevention through inspection, code enforcement, the use of model building and fire prevention codes, including detailed information on the legal, economic, and political aspects of the fire inspection process.

Course Competencies:

Competency 1: The student will explore the theories and fundamentals of how and why fires start, spread, and how they are controlled by:

1. Identifying physical properties of the three states of matter
2. Describing the components of fire
3. Recalling the physical and chemical properties of fire
4. Describing the basic terms and concepts associated with the chemistry and dynamics of fire and combustion
5. Discussing various materials and their relationship to fires as fuel
6. Summarizing the characteristics of water as a fire suppression agent
7. Discussing other-than-water suppression agents and strategies
8. Comparing methods and techniques of fire extinguishment

Competency 2: The student will comprehend the concepts of building construction components and techniques related to fire and life safety by:

1. Describing building construction components and techniques as they relate to building codes, fire and life-safety codes, fire prevention and inspection, firefighter safety, and firefighting strategy and tactics
2. Distinguishing the Classifications of major types of building construction as applicable with “model” building codes
3. Interpreting the hazards and tactical considerations associated with the various types of building construction
4. Comparing defined differences in fire resistance construction, the flame spread within building types, and describe the testing procedures used to establish ratings for each. 5. Classifying occupancy designations of the building and fire code

Competency 3: The student will understand the history and philosophy of fire prevention, including code enforcement, public information, organization and operation of a fire prevention bureau, utilization of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education by:

1. Defining the national fire problem and main issues relating thereto and the role of fire prevention
2. Analyzing the need, responsibilities, and importance of fire prevention as part of an overall mix of fire protection
3. Discussing minimum professional qualifications at the state and national level for Fire Inspector, Fire Investigator, and Public Educator
4. Defining the functions of a fire prevention bureau as well as the elements of a plan review program.
5. Identifying the laws, rules, codes, and other regulations relevant to fire protection of the authority having jurisdiction
6. Discussing training programs and media programs for fire prevention
7. Describing the history and philosophy of fire prevention
8. Discussing the major programs for public education
9. Identifying the methods of effective management of life and fire- safety programs

Competency 4: The student will understand the principles of the use of water in fire protection and how to apply hydraulic principles to analyze and to solve water supply problems by:

1. Describing the basic elements of a public water supply system including sources, distribution networks, piping, hydrants and the community fire flow demand criteria
2. Describing the principles of forces that affect water at rest and in motion

Competency 5: The student will describe the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, and water supply for fire protection and portable fire extinguishers by:

1. Explaining the benefits of fire protection systems in various types of structures
2. Analyzing the elements of a public water supply system
3. Analyzing the elements of a public water supply system
4. Identifying the different types and components of sprinkler, standpipe and foam systems
5. Defining the benefits of residential sprinkler legislation in NFPA 13
6. Identifying sprinkler design requirements for residential occupancies NFPA 13R
7. Analyzing the different types of non-water-based fire suppression systems and how these extinguish fire
8. Describing the basic components of a fire alarm system
9. Comparing defined differences in fire resistant construction and the flame spread within building types
10. Describing testing procedures used to establish ratings for fire resistance and flame spread. Analyzing different types of fire and smoke detectors and how they detect fire
11. Describing the hazards of smoke and the factors that can influence smoke movement in a building
12. Recognizing the appropriate application of the different sprinkler-system designs and head types
13. Explaining the operation and appropriate application for the different types of portable fire extinguishing systems
14. Identifying portable fire extinguisher inspection and testing requirements for all types of extinguishers

Competency 6: The student will discuss fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization, management, and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; and introduction to fire strategy and tactics by:

1. Discussing the components of the history and philosophy of the modern-day fire service
2. Identifying local, regional, state, and national organizations that provide emergency response service and their interrelation to how they impact policies rules, training, and laws
3. Identifying fire protection and emergency- service careers in both the public and the private sector

Competency 7: The student will discuss the federal, state, and local laws that regulate emergency services, national standards influencing emergency services, standard of care, tort, liability, and a review of court cases by:

1. Describing federal, state, and local laws, which regulate or influence emergency services
2. Explaining the role and purpose of national codes and standards concerning their legal influence on public safety

Competency 8: The student will identify the fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the fire setter, and types of fire causes by:

1. Identifying the responsibilities of a firefighter when responding to the scene of a fire
2. Describing how fire progression is affected by fire protection systems and building construction and design

Competency 9: The student will comprehend basic chemistry relating to the categories of hazardous materials including problems of recognition, reactivity, and health encountered by firefighters by:

1. Describing the basic chemistry and hazards involved with the nine U.S. Department of Transportation

- hazard classes and their divisions
2. Explaining how facility occupancy, transportation documents, shape and size of containers, and Safety Data Sheets (SDS) relate to recognizing the physical state and potential hazards of reactivity related to firefighter wellness and safety

Learning Outcomes:

- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning
- Create strategies that can be used to fulfill personal, civic, and social responsibilities
- Describe how natural systems function and recognize the impact of humans on the environment