



## **Course Description**

### **FFP0021 | Fire Fighter Minimum Standards | 16.40 credits**

This course teaches the initial and intermediate knowledge and skills for prospective fighters. Via lectures, drills, and evolutions, students will learn to operate as a team under supervision. Successful completion of all examinations, performance objectives and adherence to the Student Manual are required. Fire Academy Students Only

### **Course Competencies:**

**Competency 1:** The student will demonstrate knowledge of fire department organization, procedures and responsibilities by:

1. Identifying the fire fighter's tasks and areas of responsibility
2. Describing the organization of the fire department and explaining the firefighter's role as a member of the organization
3. Explaining the mission of the fire service, the local fire department, and the function of a standard operating procedure
4. Discussing the fire department rules and regulations that apply to the position of firefighter
5. Identifying the basic components of incident management and the firefighter's role within the local incident management system
6. Stating the role and responsibility of other agencies that may respond to emergencies
7. Defining the following terms: chain of command, span of control, and unity of command

**Competency 2:** The student will define and possess knowledge of firefighter safety and health by:

1. Defining the ways to prevent firefighter injuries and death and discussing the National Protection Association standards related to firefighter health and safety
2. Discussing Occupational Safety and Health Administration regulations, summarizing the IFSTA (International Fire Service Training Association) principles of Risk Management
3. Listing the main goals of a safety program and discussing firefighter health consideration and employee assistance and wellness programs
4. Providing guidelines for riding safely on the apparatus (i.e. Emergency Vehicles) and discussing safety in the fire station
5. Describing ways to maintain safety in training; stating how to properly maintain and service equipment used for training
6. Defining emergency scene safety; summarizing general guidelines for scene management, including highway incidents, crowd control and cordoning off emergency scene
7. Explaining the importance of personnel accountability and identifying basic interior operations techniques
8. Responding to an incident, correctly mounting and dismounting an apparatus (actual practical demonstration on fireground)
9. Setting up and operating in various work areas at an incident using traffic and scene control devices (actual practical demonstration on fireground)

**Competency 3:** The student will demonstrate knowledge and comprehension of fire behavior by:

1. Defining the physical and chemical changes of matter related to fire
2. Discussing modes of the fire triangle and tetrahedron; identifying two chemical, mechanical, and electrical energy heat sources
3. Defining the three methods of heat transfer and the three physical stages of matter in which fuels are commonly found
4. Describing the hazard of finely divided fuels as they relate to the combustion process; identifying flash point, fire point, and ignition temperature
5. Discussing concentrations of oxygen in air as it affects combustion and life safety

6. Distinguishing the three products of combustion commonly found in structural fires that create a life hazard
7. Defining the following units of heat measurement: British Thermal Unit (BTU), Fahrenheit (°F), Celsius (°C), and Calorie (C)
8. Describing the process of thermal layering that occurs in structural fires and how to avoid disturbing the normal layering of heat

**Competency 4:** The student will identify and demonstrate knowledge of the effects of building construction on firefighting by:

1. Describing the basic structural characteristics of the following types of building construction and building materials: wood frame, ordinary, heavy timber, noncombustible, and fire resistant
2. Identifying at least three hazards associated with truss and lightweight construction, explaining the dangerous building conditions created by fire and fire suppression activities
3. Identifying the five indicators of building collapse and describing the effects of fire and firefighting activities on the following building materials: wood, masonry, cast iron, steel, gypsum wallboard, reinforced concrete, glass, and plaster on lath
4. Defining the general fire behavior expected with each type of building construction, including the spread of fire and the safety of the building, occupants, and firefighters
5. Defining the following terms as they relate to building construction: load bearing, partition wall, veneer wall (exterior), party wall, fire wall, and cantilever wall

**Competency 5:** The student will identify and demonstrate knowledge of the components used for personal protective equipment by:

1. Describing the purpose and characteristics of protective clothing and equipment
2. Demonstrating the care, inspection and maintenance of each of the items of protective equipment: helmet (with shield), hood, boots, gloves, turnout or bunker coat, turnout or bunker pants, self-contained breathing apparatus (SCBA), personal alert safety system (PASS), and eye protection
3. Listing the four common respiratory hazards and their characteristics associated with fires and other emergencies, describing the potential long-term consequences of exposure to products of combustion
4. Demonstrating the donning and doffing of the personal protective equipment: donning self-contained breathing apparatus while wearing protective clothing and the use of self-contained breathing apparatus (SCBA) in conditions of obscured visibility
5. Identifying the physical requirements of the wearer, the limitations of the SCBA, and the safety features of all types of self-contained breathing apparatuses, demonstrating that the SCBA is in a safe condition for immediate use
6. Defining and documenting routine maintenance for SCBA, including inspection, cleaning and sanitizing

**Competency 6:** The student will identify and demonstrate the appropriate types and uses of portable fire extinguishers by:

1. Defining and documenting routine maintenance for SCBA, including inspection, cleaning and sanitizing
2. Describing the methods by which agents extinguish fire and identifying the classification of types of fire as they relate to the use of portable extinguishers
3. Identifying the appropriate extinguishers for the various classes of fire and explaining the portable extinguisher rating system
4. Extinguishing Class A and B fires using the appropriate portable fire extinguisher
5. Naming and defining the five classes of fire and the hazards of the fire classes and extinguisher
6. Describing the pull, aim, squeeze, sweep (PASS) method of application and discussing the damaged portable fire extinguishers and obsolete portable fire extinguishers
7. Summarizing the procedures that should be part of every fire extinguisher inspection

- and operating a stored pressure water extinguisher to extinguish a Class A fire
8. Demonstrating in full protective equipment, the appropriate extinguisher to extinguish a Class C fire

**Competency 7:** The student will identify and develop the appropriate uses of ropes, tools, and equipment by:

1. Defining and explaining the differences between life safety and utility rope, identifying the knot and describing the purpose for which it would be used
2. Identifying the construction characteristics and appropriate uses of natural and synthetic ropes
3. Distinguishing and explaining the proper size and amount of rope; tying a bowline knot, a clove hitch, figure of eight on a bight, figure of eight follow through, figure of eight stopper knot, chimney hitch, a Becket or sheet bend, girth hitch, and an overhand safety knot
4. Learning the proper segments of a fire service knot by demonstrating the bight, loop, round turn, and half hitch as used in tying knots and hitches
5. Selecting an approved knot by demonstrating hoisting any selected forcible entry tool, ground ladder, or appliance to a height of at least 20 feet (6m)
6. Identifying the techniques of inspecting, cleaning, maintaining, and storing rope by utilizing equipment
7. Utilizing a rope to tie ladders, hoses, and other equipment so as to secure them to immovable objects

**Competency 8:** The student will practice and perform building search & victim removal by:

1. Defining and distinguishing the difference between a rescue and an extrication operation by demonstrating the removal of injured persons from the immediate hazard by the using carries, drags, and stretchers
2. Identifying and performing the primary and secondary search procedures under fire conditions, with a rope or hose and without a rope or hose
3. Identifying and demonstrating the use of the following rescue tools: cribbing and shoring material, block and tackle, hydraulic devices, pneumatic devices, and ratchet devices
4. Explaining and performing the following evolutions which may be required to extricate an entrapped victim of a motor vehicle crash by displacing: vehicle roof, vehicle door, windshield, steering wheel, steering column and dashboard
5. Describing the methodology for finding victims in a rescue situation and preparing for the psychological effects of operating in obscured conditions and finding ways to control these effects

**Competency 9:** The student will describe and perform the techniques of forcible entry by:

1. Identifying and demonstrating the use of each type of forcible entry tool, while summarizing the safety rules for performance
2. Following the method and procedure of properly cleaning, maintaining, and inspecting each type of forcible entry tool
3. Locating and identifying the materials and construction features of doors, windows, and walls and the dangers associated with forcing entry through each
4. Describing and practicing the procedures for forcing entry through at least three different types of doors, windows, and walls
5. Demonstrating opening various types of windows from inside and outside, with and without the use of fire department tools and breaking window or door glass and removing obstruction
6. Naming the characteristics of various types of wooden swinging doors, metal swinging doors, sliding doors, revolving doors and overhead doors
7. Explaining how fire doors function with the various characteristics of basic types of locks

8. Listing the potential dangers associated with forcing entry through walls and describing the techniques for breaching floors
9. Breaching walls with a selection of tools and protective equipment as part of a team-force entry or escape

**Competency 10:** The student will demonstrate an understanding of safe ground ladders usage by:

1. Explaining and describing the proper procedures to follow when lifting and lowering ground ladders
2. Identifying and practicing the use of the following types of ladders: folding /attic, roof, straight/wall, and aerial ladders
3. Identifying the equipment to consider before removing and replacing ladders on apparatus
4. Demonstrating (as an individual and as a member of a team) the following ladder carries: one person carries, two people carry, and three people carry
5. Performing the raising, positioning and lowering the following types of ground ladders: 14 ft. single or wall ladder, 24 ft. extension ladder, 35 ft. extension ladder, and an attic/folding ladder
6. Demonstrating the deployment of a roof ladder on a pitched roof, climbing the full length of each type of ground (and aerial, if available)
7. Practicing climbing the full length of each type of ground (and aerial, if available) ladder and bring an "injured person" down the ladder
8. Demonstrating the techniques of working from ground or aerial ladders with tools and appliances, with and without a safety harness
9. Utilizing the techniques of cleaning, inspecting and maintaining ladders
10. ladder carrying firefighting tools or equipment while ascending and descending

**Competency 11:** The student will demonstrate knowledge and perform appropriate ventilation practices by:

1. Defining and describing the principles of ventilation, and identifying the advantages and effects of fireground ventilation
2. Explaining the principles of natural, horizontal, mechanical and hydraulic ventilation
3. Identifying and understanding the dangers present and precautions to be taken in performing ventilation
4. Describing the advantages and disadvantages of the following types of ventilation: vertical, horizontal, trench/strip, mechanical, mechanical pressurization, and hydraulic
5. Identifying the role of proper ventilation in the prevention of backdrafts explosions, explaining the methods or procedures used to prevent backdraft explosions
6. Demonstrating the tools and equipment used during ventilation
7. Evaluating (from a flat, pitched or arched roof with both safe and unsafe soft areas, protective equipment, tools, ladders) the integrity of a roof system by sounding
8. Comparing and contrasting positive-pressure and negative-pressure ventilation

**Competency 12:** The student will operate and demonstrate the use of water supplies by:

1. Identifying the water distribution system and other water sources in the local community by defining the following parts of a water distribution system: distributors, primary feeders, and secondary feeders
2. Explaining and defining the operation of: a dry-barrel hydrant, a wet-barrel hydrant, the normal operating pressure of a water distribution system, the residual pressure of a water distribution system, and flow pressure

3. Describing how the following conditions reduce hydrant effectiveness: obstructions to use of hydrant, direction of hydrant outlets to suitability of use, mechanical damage, rust and corrosion, failure to open the hydrant fully, ability to drain
4. Defining a tanker shuttle and identifying the apparatus, equipment, and appliances required to provide water at rural locations by relay pumping, large diameter hose, or a tanker shuttle
5. Identifying and labeling the following types of main water valves: indicating, a non-indicating, post indicator, and outside screw and yoke
6. Demonstrating the deployment of a portable water tank while connecting a supply hose to a hydrant, and fully opening and closing the hydrant
7. Joining the hydrant to pumper hose connections for forward and reverse lays
8. Assembling and connecting the equipment necessary for drafting from a static water supply source
9. Explaining the loading and off-loading of tanks on mobile water supply apparatus by identifying the pipe sizes used in water distribution systems for residential, business, and industrial districts

**Competency 13:** The student will develop the proper use of fire hose, nozzles, and appliances by:

1. Identifying and discussing the fire hose sizes, types, amounts, and use of hose as required to be carried on a pumper according to National Fire Protection Association (NFPA) 1901 Standard
2. Demonstrating the use of all nozzles, hose adapters, and hose appliances as required to be carried on a pumper according to NFPA 1901
3. Operating (as an individual and as a member of a team) the necessary equipment to advance dry hose lines of two different sizes, both of which shall be 1 1/2 inch or larger, from a pumper into a structure, up a ladder to a second-floor landing, up an inside stairway to an upper floor, an outside stairway to an upper floor, down an inside stairway to a lower floor, down an outside stairway to a lower floor, and to an upper floor by hoisting
4. Explaining and demonstrating techniques for cleaning fire hose, couplings, and nozzles; inspecting for damage (with the rate at least 3) different types of hose loads and finishes
5. Demonstrating three types of hose rolls and two types of hose carries with coupling and uncoupling of fire hose
6. Discussing and describing the purpose, advantages and disadvantages of the flat, minuteman and triple layer hose load
7. Distinguishing between characteristics of threaded couplings and non-threaded couplings
8. Demonstrating the methods of extending a hose line and replacing a burst section of the hose line, while working from the ground ladder with a charged attack line, which shall be 1-1/2 inch or larger

**Competency 14:** The student will explain and demonstrate the concept of fire streams by:

1. Defining a fire stream and listing the methods that are used with fire streams to reduce the heat from a fire and provide protection to firefighters and exposures
2. Explaining and listing the properties of a fire stream, discussing the extinguishing properties of water
3. Demonstrating how to open and close a nozzle and how to adjust its stream pattern and flow setting when applicable
4. Defining water hammer and methods to prevent water hammer
5. Identifying precautions to be followed while advancing hose lines to a fire
6. Describing three observable results that are obtained when the proper application of a fire stream is accomplished

7. Assembling and operating a foam fire stream arrangement given the appropriate equipment while demonstrating the methods for applying foam

**Competency 15:** The student will summarize the concept and development of fire control by:

1. Describing the initial factors to consider when suppressing structure fires by listing the fundamental steps in the process of fire extinguishment
2. Explaining the importance of exposure protection in the extinguishment process by giving considerations prior to entering a burning building
3. Explaining the gas cooling technique as well as describing direct attack, indirect attack and combination attack
4. Discussing deployment of master stream devices and explaining the aerial devices used to deliver elevated master streams
5. Differentiating between the differences in attack and control techniques for at grade and above grade fires
6. Demonstrating, while operating from a water source, hose line, nozzle, sufficient pressure, tools, equipment, protective equipment and a class A fire, the following: ability to apply water using direct attack, ability to apply water using indirect attack, and ability to apply water using combination attack
7. Demonstrating attacking a passenger vehicle fire and extinguishing a fire in a trash container

**Competency 16:** The student will identify and demonstrate the appropriate use of automatic sprinkler systems by:

1. Listing the functions of fire detection, alarm and suppression systems and identifying a fire department sprinkler connection and water motor alarm
2. Connecting hose line(s) to a fire department connection of a sprinkler or standpipe system
3. Describing the control valves and operating valves used in sprinkler systems and defining how the automatic sprinkler heads open and release water
4. Listing the three methods of stopping the flow of water from an active sprinkler head: wedges, kit, and valve
5. Defining the value of automatic sprinklers in providing safety to the occupants in a structure and demonstrating carrying a 100 ft. attack line, 1 1/2" or larger, into a building, connecting it to a standpipe, and advancing from a standpipe
6. Identifying the "Main Control" valve on an automatic sprinkler system

**Competency 17:** The student will develop the knowledge and awareness of loss control by:

1. Explaining the philosophy of loss control and listing the four methods of property conservation/loss control: salvage, overhaul, ventilation and minimizing water damage
2. Discussing the planning and procedures for salvage operations and describing salvage covers, salvage cover maintenance, and equipment used in salvage operations
3. Listing the three types of salvage covers
4. Listing the four uses of salvage covers: cover roof openings, cover furnishings, chutes and catchalls
5. Identifying the basic principles of salvage cover deployment and summarizing the methods used to catch and route water from firefighting operations and cover openings, using salvage covers
6. Defining overhaul operation and explaining the purpose of overhaul
7. Demonstrating locating hidden fire by recognizing at least four indicators of hidden fires: discoloration, distortion, hot spot, smoke and failed sheet rock
8. Identifying the overhaul process that includes cleaning, inspecting, and repairing a salvage cover

9. Creating a water chute with and without pike poles
10. Demonstrating on a structure how to handle water run-off from an upper floor
11. Extinguishing a training fire using protective equipment, tools, and hose line(s)
12. Locating and extinguishing hidden fires

**Competency 18:** The student will analyze and demonstrate knowledge of protecting fire scene evidence by:

1. Identifying signs and indications of an incendiary fire
2. Outlining at least three obvious signs of arson, explaining the important observations to be made in route, after arriving at the scene and during firefighting operations
3. Defining at least two visual indicators used in determining the area of origin by showing post fire pictures of a fire scene and identifying the obvious signs of arson
4. Discussing and explaining the firefighter conduct and statements at the scene as well the responsibilities of the firefighter after the fire
5. Describing the protection and preservation evidence

**Competency 19:** The student will summarize and recognize the various types of fire department communications by:

1. Defining communication responsibilities of the firefighter and explaining the necessary skills for fire department communication
2. Describing basic communications equipment used in telecommunications centers
3. Explaining the fundamental skills of business telephone courtesy
4. Explaining and demonstrating how a firefighter should proceed when receiving emergency calls from the public
5. Describing the various types of public alerting systems, listing at least five critical aspects of information needed by dispatch to properly process the call
6. Demonstrating the use of portable radio for routine and emergency traffic by performing the proper operation of both mobile and portable radio equipment
7. Explaining the purpose of tactical channels by discussing the calls for additional resources and emergency radio traffic, as well as discussing evacuation signals and personnel accountability reports
8. Demonstrating the ability to report observations in written or oral form

**Competency 20:** The student will identify and demonstrate knowledge of the Florida State Emergency Response Commission (SERC) awareness level of hazardous materials by:

1. Defining regulations and identifying the regulatory requirements that apply to responders of hazardous materials incidents (Awareness)
2. Identifying the expected roles of responders of hazardous materials incidents and stating who must receive awareness training
3. Identifying the four roles or functions of the awareness level responder
4. Defining Hazardous Materials and naming the five levels of hazardous materials training
5. Explaining the potential outcomes associated with a hazardous materials emergency
6. Describing how hazardous material incidents differ from other emergencies and identifying the hazards posed by hazardous materials incidents
7. Recognizing the presence of hazardous substances in an emergency and identifying the six clues to the presence of hazardous materials
8. Identifying the three components of a hazardous materials incident and defining the common physical and chemical properties as they relate to hazardous materials

9. Identifying specific types of containers and the types of spills and stating their importance in determining the potential course and harm of the incident

**Competency 21:** The student will gain fundamental knowledge of the various operation levels of hazardous materials by:

1. Defining Code of Federal Regulations 1910.20(q)(6)(ii)(A) – (F) & Florida State Emergency Response Team Operations
2. Explaining the four functions of Hazmat Awareness and the five functions of Hazmat Operations
3. Explaining a Hazmat Operations function and defining the function
4. Performing a proper operations level action at a hazmat incident and matching the action to the operations level function
5. Identifying the incident levels and the need for using of an Incident Management System
6. Demonstrating the chain of command by identifying the methods for communication
7. Reviewing the Department of Transportation text and other related materials given for awareness of hazmat information using the Emergency Response Guide

**Competency 22:** The student will be introduced to wildland fire behavior by:

1. Defining basic terminology used in wildland fire and the elements of the fire triangle
2. Describing the three methods of heat transfer and listing the basic characteristics of topography and describing how they affect wildland fire behavior
3. Identifying the basic fuel types and their three methods of heat transfer
4. Describing the effect temperature and relative humidity have on wildland fire behavior, the effect of precipitation on wildland fire behavior, the differences between a stable and unstable atmosphere and the general and local winds
5. Listing the different types of fire weather forecasts and outlooks available, identifying the indications that fire behavior may be increasing
6. Describing the combined influences that may cause extreme fire behavior and safety concerns
7. Stating the seven factors of the fire environment of which to be aware while monitoring fire behavior

**Competency 23:** The student will have knowledge of wildland fire behavior by:

1. Identifying the nine parts of a wildland fire:
  - a. Finger
  - b. Right and Left Flank
  - c. Head
  - d. Island
  - e. Origin
  - f. Perimeter
  - g. Pocket
  - h. Rear/Heel
  - i. Spot Fire
2. Defining nine wildland fire behavior terms:
  - a. Backing
  - b. Blowup
  - c. Creeping
  - d. Crowning
  - e. Running
  - f. Smoldering



- g. Spotting
    - h. Spread
    - i. Torching
3. Discussing five other useful wildland firefighting terms:
  - a. Anchor Point
  - b. Class of Fire
  - c. A-G
  - d. Control Line
  - e. Fireline
  - f. Mop up
4. Explaining the importance of the proper use and maintenance of Personal Protective Equipment (PPE)
5. Developing a list of personal gear needed for an extended period away from the home station
6. Reviewing handouts and materials provided by instructors which include awareness procedures and guidelines

**Competency 24:** The student will participate and complete a physical fitness program by:

1. Successfully completing a medical physical examination by a board-certified physician in accordance with Nation Fire Protection Association 1582 and Florida State Statute 633
2. Participating in physical fitness exercises during training for a minimum of eight hours
3. Participating in exercises during the course of training which includes: warm-up, stretching, strength/conditioning, stamina improvement, and cool-down
4. Performing exercises outside of class hours to meet individual needs
5. Conducting a physical ability test and recording all results before the course

**Competency 25:** The student will demonstrate acquired knowledge in fire training examinations by:

1. Taking written and oral examinations on each academic portion of the outline (chapters)
2. Taking performance objective examinations on certain portions of the outline

**Competency 26:** The student will demonstrate a controlled burning exercise by:

1. Extinguishing a Class, A & B fire inside of a structure using the appropriate protective equipment, tools, and agents
2. Extinguishing a Class, A or B fire in a simulated basement inside of a structure using the appropriate protective equipment, tools, and agents
3. Extinguishing an exterior Class, A or B fire using the appropriate protective equipment, tools, and agents
4. Extinguishing an exterior open pan of a Class B liquid using the appropriate protective equipment, tools, and agents
5. Extinguishing a vehicle fire using the appropriate protective equipment, tools, and agents

**Learning Outcomes:**

- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information
- Describe how natural systems function and recognize the impact of humans on the environment