

Chapter 1 – FF I

Orientation and Fire Service History

Lesson Goal

After completing this lesson, the student shall be able to describe how the history and culture of the fire service influence its basic mission, the roles within it, and the skills needed to operate as a part of the fire service.

Objectives

Upon successful completion of this lesson, the student shall be able to:

1. Summarize the history of the fire service.
2. Explain the organizational characteristics, cultural challenges, and cultural strengths that influence the fire service.
3. Describe the mission of the fire service. *[NFPA® 1001, 5.1.1]*
4. Describe the organization of fire departments. *[NFPA® 1001, 5.1.1]*
5. Distinguish among functions of fire companies. *[NFPA® 1001, 5.1.1]*
6. Summarize primary knowledge and skills the firefighter must have to function effectively. *[NFPA® 1001, 5.1.1, 6.1.1]*
7. Distinguish among the primary roles of fire service personnel. *[NFPA® 1001, 5.1.1, 6.1.1]*
8. Describe fire department organizational principles. *[NFPA® 1001, 5.1.1]*
9. Locate information in departmental documents and standard or code materials. *[NFPA® 1001, 5.1.2]*
10. Distinguish between fire department SOPs and rules and regulations. *[NFPA® 1001, 5.1.1]*
11. Explain the ways the fire service may interact with other organizations. *[NFPA® 1001, 5.1.1]*

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Firefighter Safety and Health

Lesson Goal

After completing this lesson, the student shall be able to discuss how firefighter health, safety prevention, and situational awareness are interrelated parts of preventing on-the-job injuries.

Objectives

Upon successful completion of this lesson, the student shall be able to:

1. List the main types of job-related firefighter fatalities, injuries, and illnesses. *[NFPA® 1001, 5.1.1]*
2. Describe the National Fire Protection Association® standards related to firefighter safety and health. *[NFPA® 1001, 5.1.1]*
3. Identify Occupational Safety and Health Administration (OSHA) regulations and how they relate to firefighters. *[NFPA® 1001, 5.1.1]*
4. Summarize the model that supports the concept of risk management. *[NFPA® 1001, 5.1.1]*
5. Describe fire department safety and health programs. *[NFPA® 1001, 5.1.1]*
6. Summarize firefighter health awareness issues. *[NFPA® 1001, 5.1.1]*
7. Summarize safe vehicle operations. *[NFPA® 1001, 5.3.2]*
8. Summarize guidelines for riding safely on the apparatus. *[NFPA® 1001, 5.3.2]*
9. Describe ways to help prevent accidents and injuries in fire stations and facilities. *[NFPA® 1001, 5.1.1]*
10. Explain general guidelines for tool and equipment safety. *[NFPA® 1001, 5.1.1]*
11. Describe ways to maintain safety in training. *[NFPA® 1001, 5.1.1]*

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12. State the practices a Firefighter I uses for emergency scene preparedness and safety. *[NFPA® 1001, 5.1.1, 5.3.3]*
13. Summarize general guidelines for scene management including highway incidents, crowd control, and cordoning off emergency scenes. *[NFPA® 1001, 5.1.1, 5.3.3]*
14. Explain the importance of personnel accountability. *[NFPA® 1001, 5.3.5]*
15. Respond to an incident, correctly mounting and dismounting an apparatus. *[NFPA® 1001, 5.3.2; Skill Sheet 2-1-1]*
16. Wearing appropriate PPE, including reflective vest, demonstrate scene management at roadway incidents using traffic and scene control devices. *[NFPA® 1001, 5.3.3; Skill Sheet 2-1-2]*

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Fire Behavior

Lesson Goal

After completing this lesson, the student shall be able to explain the science of fire behavior as it relates to recognizing stages of fire development, rapid fire behavior, and fire fighting operational safety.

Objectives

Upon successful completion of this lesson, the student shall be able to:

1. Explain the science of fire as it relates to energy, forms of ignition, and modes of combustion. *[NFPA® 1001, 5.3.11]*
2. Describe the impact of thermal energy on heat, temperature, and heat transfer. *[NFPA® 1001, 5.3.12]*
3. Recognize the physical states of fuel. *[NFPA® 1001, 5.3.10]*
4. Explain the relationship between oxygen and life safety. *[NFPA® 1001, 5.3.11]*
5. Identify the products of self-sustained chemical reactions. *[NFPA® 1001, 5.3.11]*
6. Explain the factors that affect fire development. *[NFPA® 1001, 5.3.11]*
7. Describe the stages of fire development. *[NFPA® 1001, 5.3.11]*
8. Recognize signs, causes, and effects of rapid fire development. *[NFPA® 1001, 5.3.11]*
9. Describe the methods through which fire fighting operations can influence fire behavior. *[NFPA® 1001, 5.3.11, 5.3.12]*

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Firefighter Personal Protective Equipment

Lesson Goal

After completing this lesson, the student shall be able to properly use and care for personal protective equipment (PPE) as well as describe how it can protect firefighters. Students will understand how the limitations of PPE impact the need to select equipment appropriate for the incident in order to take advantage of this protection.

Objectives

Upon successful completion of this lesson, the student shall be able to:

1. Describe the purpose of personal protective equipment. *[NFPA® 1001, 5.1.1, 5.3.3]*
2. Describe characteristics of each type of personal protective equipment. *[NFPA® 1001, 5.3.2]*
3. Summarize guidelines for the care of personal protective clothing. *[NFPA® 1001, 5.1.1, 5.3.3, 5.5.1]*
4. Explain safety considerations for personal protective equipment. *[NFPA® 1001, 5.3.1]*
5. Identify respiratory hazards. *[NFPA® 1001, 5.3.1]*
6. Identify types of respiratory protection equipment. *[NFPA® 1001, 5.3.1]*
7. Describe the limitations of respiratory protection equipment. *[NFPA® 1001, 5.3.1]*
8. Explain methods for storing respiratory protection equipment. *[NFPA® 1001, 5.5.1]*
9. Describe general donning and doffing considerations for protective breathing apparatus. *[NFPA® 1001, 5.3.1, 5.3.2]*
10. Summarize general considerations for protective breathing apparatus inspections and care. *[NFPA® 1001 5.1.1, 5.5.1]*

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11. Summarize safety precautions for refilling SCBA cylinders. *[NFPA® 5.5.1]*
12. Explain procedures for replacing SCBA cylinders. *[NFPA® 1001 5.3.1]*
13. Explain safety precautions for SCBA use. *[NFPA® 1001 5.3.1]*
14. Describe nonemergency and emergency exit indicators. *[NFPA® 5.3.1]*
15. Describe nonemergency exit techniques. *[NFPA® 1001 5.3.1]*
16. Demonstrate the method for donning structural personal protective clothing for use at an emergency. *[NFPA® 1001, 5.1.2, 5.3.1, 5.3.2, 5.3.3, Skill Sheet 6-1-1]*
17. With structural personal protective clothing in place, demonstrate the over-the-head method of donning an SCBA. *[NFPA® 1001 5.3.1, 5.3.2, 5.3.3, Skill Sheet 6-1-2]*
18. With structural personal protective clothing in place, demonstrate the coat method of donning an SCBA. *[NFPA® 1001 5.3.1, 5.3.2, 5.3.3, Skill Sheet 6-1-3]*
19. With structural personal protective clothing in place, demonstrate the method for donning an SCBA while seated. *[NFPA® 1001 5.3.1, 5.3.2, 5.3.3, Skill Sheet 6-1-4]*
20. Doff personal protective equipment, including respiratory protection, and prepare for reuse. *[NFPA® 1001 5.1.2, 5.3.2, 5.3.3, Skill Sheet 6-1-5]*
21. Demonstrate the steps for inspecting an SCBA. *[NFPA® 1001 5.3.2, 5.5.1; Skill Sheet 6-1-6]*
22. Demonstrate the steps for cleaning and sanitizing an SCBA. *[NFPA® 1001 5.3.2, 5.5.1; Skill Sheet 6-1-7]*
23. Demonstrate the method for filling an SCBA cylinder from a cascade system, wearing appropriate PPE, including eye and ear protection. *[NFPA® 1001 5.3.1; Skill Sheet 6-1-8]*
24. Demonstrate the method for filling an SCBA cylinder from a compressor/purifier system wearing appropriate PPE, including eye and ear protection. *[NFPA® 1001 5.3.1; Skill Sheet 6-1-9]*
25. Demonstrate the one-person method for replacing an SCBA cylinder. *[NFPA® 1001 5.3.1; Skill Sheet 6-1-10]*

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26. Demonstrate the two-person method for replacing an SCBA cylinder. [*NFPA[®] 1001 5.3.1; Skill Sheet 6-I-11*]

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Portable Fire Extinguishers

Lesson Goal

After completing this lesson, the student shall be able to select, use, and correctly maintain portable fire extinguishers.

Objectives

Upon successful completion of this lesson, the student shall be able to:

1. Explain portable fire extinguisher classifications. *[NFPA® 1001, 5.3.16]*
2. Describe types of portable fire extinguishers. *[NFPA® 1001, 5.3.16]*
3. Define the ratings in a portable fire extinguisher rating system. *[NFPA® 1001, 5.3.16]*
4. Explain the considerations taken when selecting and using portable fire extinguishers. *[NFPA® 1001, 5.3.16]*
5. Identify procedures used for the inspection, care, and maintenance of portable fire extinguishers. *[NFPA® 1001, 5.3.16, 5.5.1]*
6. Operate a stored pressure water extinguisher. *[NFPA® 1001, 5.3.16; Skill Sheet 7-1-1]*
7. Operate a dry chemical (ABC) extinguisher. *[NFPA® 1001, 5.3.16; Skill Sheet 7-1-2]*
8. Operate a carbon dioxide (CO₂) extinguisher. *[NFPA® 1001, 5.3.16; Skill Sheet 7-1-3]*

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Fire Hose

Lesson Goal

After completing this lesson, the student shall be able to describe fire hose characteristics, describe inspection and maintenance procedures, and explain various hose rolls, loads, and finishes. In addition, students will be able to perform various hose loads and advance hoselines.

Objectives

Upon successful completion of this lesson, the student shall be able to:

1. Explain basic fire hose characteristics. *[NFPA® 1001, 5.3.8, 5.3.10]*
2. Describe different causes of and prevention methods for hose damage. *[NFPA® 1001, 5.5.2]*
3. Identify basic inspection, care, and maintenance methods for fire hose. *[NFPA® 1001, 5.5.2]*
4. Compare various uses for hose appliances and tools. *[NFPA® 1001, 5.3.8, 5.3.10]*
5. Describe basic hose rolls. *[NFPA® 1001, 5.5.2]*
6. Explain basic hose loads and finishes. *[NFPA® 1001, 5.5.2]*
7. Compare various methods to make preconnected hose loads for attack lines. *[NFPA® 1001, 5.5.2]*
8. Explain the methods used for supply hose lays. *[NFPA® 1001, 5.3.8, 5.3.15]*
9. Recognize different methods for handling hoselines. *[NFPA® 1001, 5.3.8, 5.3.10]*
10. Describe methods for advancing hoselines in various ways. *[NFPA® 1001, 5.3.8, 5.3.10]*
11. List the considerations that can impact operating attack hoselines. *[NFPA® 1001, 5.3.8, 5.3.10]*

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12. Couple and uncouple a hose. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-1]*
13. Inspect and maintain a fire hose. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-2]*
14. Make a straight hose roll. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-3]*
15. Make a donut hose roll. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-4]*
16. Make the flat hose load. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-5]*
17. Make the accordion hose load. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-6]*
18. Make the horseshoe hose load. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-7]*
19. Make a finish. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-8]*
20. Make the preconnected flat hose load. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-9]*
21. Make the triple layer hose load. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-10]*
22. Make the minuteman hose load. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-11]*
23. Make a hydrant connection from a forward lay. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-12]*
24. Make the reverse hose lay. *[NFPA® 1001, 5.5.2; Skill Sheet 15-I-13]*
25. Advance a hose load. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-14]*
26. Deploy a wye-equipped hose during a reverse hose lay. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-15]*
27. Advance a charged hoseline using the working line drag method. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-16]*
28. Advance a line into a structure. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-17]*
29. Advance a line up and down an interior stairway. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-18]*
30. Connect to a stairway standpipe connection and advance an attack hoseline onto a floor. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-19]*

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31. Advance an uncharged line up a ladder into a window. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-20]*
32. Advance a charged line up a ladder into a window. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-21]*
33. Operate a charged attack line from a ladder. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-22]*
34. Operate a small hoseline – One-firefighter method. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-23]*
35. Operate a large hoseline for exposure protection – One-firefighter method. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-24]*
36. Operate a large hoseline – Two-firefighter method. *[NFPA® 1001, 5.3.15; Skill Sheet 15-I-25]*
37. Extend a hoseline. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-26]*
38. Replace a burst hoseline. *[NFPA® 1001, 5.3.10; Skill Sheet 15-I-27]*

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Fire Streams

Lesson Goal

After completing this lesson, the student shall be able to describe characteristics of fire streams and their uses. The student shall also be able to operate smooth bore nozzles, fog nozzles, and broken stream delivery devices.

Objectives

Upon successful completion of this lesson, the student shall be able to:

1. Explain the way vaporization and steam relate to the extinguishing properties of water. *[NFPA® 1001, 5.3.10]*
2. Identify the factors that create pressure loss or gain. *[NFPA® 1001, 5.3.10]*
3. Describe the impact water hammer has on fire streams. *[NFPA® 1001, 5.3.10]*
4. Explain fire stream patterns and their possible limiting factors. *[NFPA® 1001, 5.3.10]*
5. Describe the three types of fire stream nozzles. *[NFPA® 1001, 5.3.10]*
6. Compare the different types of nozzle control valves. *[NFPA® 1001, 5.3.10]*
7. Describe the factors in operating and maintaining handline nozzles. *[NFPA® 1001, 5.3.10]*
8. Operate a fog-stream nozzle. *[NFPA® 1001, 5.3.10; Skill Sheet 16-1-1]*
9. Operate a broken stream nozzle. *[NFPA® 1001, 5.3.10; Skill Sheet 16-1-2]*
10. Operate a solid stream nozzle. *[NFPA® 1001, 5.3.10; Skill Sheet 16-1-3]*

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Fire Control

Lesson Goal

After completing this lesson, the student shall be able to discuss fire control of fires in structures, in Class C fires, in Class D fires, vehicle fires, and ground cover fires and be able to perform various skills related to fire attack.

Objectives

Upon successful completion of this lesson, the student shall be able to:

12. Explain actions taken when suppressing a vehicle fire. *[NFPA® 1001, 5.3.7]*
28. Attack a passenger vehicle fire. *[NFPA® 1001, 5.3.7; Skill Sheet 17-1-8]*