



Course Outline and Objectives

Firefighter I, Firefighter II as Describe in the Firefighter Handbook of Essentials.

Chapter:

1. Overview of the American Fire Service.

After completing the chapter, the student should be able to:

- Describe the role of the firefighter in the fire service.
- Define the importance of the mission of the fire service and the purpose of a mission statement.
- Identify the major events that have alerted the history of the fire service.

2. Fire Department Organization, Command and Control.

After completing the chapter, the student should be able to:

- Describe a typical fire department organization and mission statement.
- Define the functions of a firefighter and list the common tasks a firefighter must be to perform.
- Explain what a standard operating procedure is and list five general areas covered by SOP's.
- List five rules and regulations of an organization and describe how they apply to the firefighter.
- List and define the five major components of an incident management system.
- Describe duties and responsibilities in assuming and transforming command within the incident management system.
- List five allied agencies the assist with fire department operations and describe their functions.

3. Communications and Alarms

After completing the chapter, the student should be able to:

- Demonstrate the proper method of answering a non-emergency administration call.
- Demonstrate the proper method of answering an emergency call and effectively obtaining full and complete information, and promptly relaying that information to the communication center.
- Demonstrate the proper method of operating a mobile radio.
- Demonstrating the proper method of operating a portable radio.
- Complete a basic incident report.

4. Fire Behavior

After completing the chapter, the student should be able to:

- Describe the chemistry and physicals of fire.
- Identify the sources of heat.
- Describe the characteristics of fire.
- Describe the effects of oxygen on fire.
- Describe combustion.
- Describe vapor pressure and vapor density.
- Describe the meaning of flammable and explosive limits.
- Describe the three types of heat transfer.
- Describe the significance if the thermal conductivity of material.
- Describe fuel types and their effects on combustion.
- Describe the basis for the theory of fire extinguishment.
- Identify the classes of fire and methods of extinguishment.
- Explain thermal layering, flashover and backdraft.

5. Firefighter Safety

After completing the chapter, the student should be able to:

- Define risk management.
- List the leading causes of death and injury in the fire service.
- List the NFPA standards that affect and pertain to firefighter occupational safety.

- d. List the five components that make up the accident chain.
 - e. List the three key components of the safety triad.
 - f. Discuss the difference between formal and informal procedures.
 - g. Name the three factors that influence the equipment portion of the safety triad.
 - h. Name the three factors that influence the personnel portion of the safety triad.
 - i. Name the three partners that work together to achieve firefighter safety.
- 6. Personal Protective Clothing and Ensembles.**
After completing the chapter, the student should be able to:
- a. Describe the role of personal protective equipment for firefighters.
 - b. Define the relationship between PPE and national standards and regulations.
 - c. List the components and unique elements of structural, proximity, and wildland PPE ensembles.
 - d. Describe a serviceable inspection of structural PPE.
 - e. Describe the conditions and damage that render structural PPE unserviceable.
 - f. Given a structural PPE ensemble, appropriately don the ensemble within one minute.
 - g. Demonstrate a team check following PPE donning.
- 7. Self Contained Breathing Apparatus**
After completing the chapter, the student should be able to:
- a. List two conditions requiring respiratory protection.
 - b. List and explain the effects of oxygen.
 - c. List one legal requirement for use of self-contained breathing apparatus (SCBA).
 - d. List two types of SCBA.
 - e. List four components of the SCBA used by the authority having jurisdiction.
 - f. Demonstrate two different SCBA donning procedures at 100 percent accuracy in the time limit established by the authority having jurisdiction.
 - g. Demonstrate routine inspection procedures of SCBA in accordance with manufacturer's instructions.
 - h. Demonstrate after-use maintenance and servicing of SCBA in accordance with manufacturers instructions.
 - i. Demonstrate the servicing of an SCBA cylinder with the air-filling system used by the authority having jurisdiction.
- 8. Portable Fire Extinguishers**
After completing the chapter, the student should be able to:
- a. Explain the five classes of fire and the risk associated with each class.
 - b. Identify the kind of fire extinguisher used for each class.
 - c. Explain the rating system of portable extinguisher for Class A, B, and C.
 - d. Identify the limitations of portable extinguishers.
 - e. Demonstrate the operation of portable fire extinguishers.
 - f. Explain the care and maintenance of portable fire extinguishers.
 - g. Given a fire scenario or an actual fire, choose the fire extinguisher of correct size, agent and Rating to extinguish the fire.
- 9. Water Supply**
After completing the chapter, the student should be able to:
- a. Explain the value of proper water supply to other goals of firefighting
 - b. Identify sources of water supply for drinking and firefighting.
 - c. Explain the difference between groundwater and surface water.
 - d. Explain the purpose of mobile water supply apparatus.
 - e. Identify types of fire hydrants and their use.
 - f. Identify valves associated with water distribution systems.
 - g. Explain how to operate a rural water supply.
 - h. Explain a portable water tank operations.
 - i. Explain tender operations.

- j. Identify the proper pressure associated with water distribution systems.
- k. Conduct a test of the operability and flow of a fire hydrant.
- l. Determine the static, residual, and flow pressure of water sources.
- m. Identify causes of obstructions and damage to fire hydrants and mains.

10. Fire Hose and Appliances

After completing the chapter, the student should be able to:

- a. Identify and explain the construction of fire hose.
- b. Demonstrate the care and maintenance of fire hose.
- c. Identify the types of hose couplings and threads.
- d. Demonstrate the care and maintenance of hose couplings.
- e. Identify and explain the use of hose tools and appliances.
- f. Demonstrate the coupling and uncoupling of fire hose.
- g. Demonstrate the rolling, carrying, and loading of fire hose.
- h. Demonstrate the advancing of fire hoselines, both charged and uncharged.
- i. Demonstrate the establishment of a water supply connection.
- j. Demonstrate the extending of hoselines.
- k. Demonstrate the replacement of burst hose section.
- l. Demonstrate the procedure for laying hoselines for water supply.
- m. Demonstrate the deployment of master streams for water supply.
- n. Demonstrate the service testing of hose.

11. Nozzles, Fire Streams, and Foam.

After completing the chapter, the student should be able to:

- a. Define a fire stream.
- b. Identify the purpose of a fire stream.
- c. Identify the various types of fire stream.
- d. Identify the types of nozzles.
- e. Explain the pattern and use of each type of nozzle.
- f. Demonstrate the operation of the various types of nozzles.
- g. Explain the operation and characteristics of various sizes (diameter) of fire streams.
- h. Explain the reach and application of various size of fire streams.
- i. Identify the three types of fire attack.
- j. Explain the factors in choosing the type of fire attack.
- k. Identify and explain the principles of hydraulics relating to fire streams.
- l. Define and explain friction loss.
- m. Define and explain nozzle pressure and reaction.
- n. Define and explain elevation as a factor in fire streams.
- o. Explain adverse factors in operations of fire streams.
- p. Explain the selection factors for fire streams in overall fire operations.
- q. Define foam.
- r. Identify the types of foam.
- s. Explain the principles of foam for fire suppression.
- t. Explain the operation of foam-making equipment.

12. Protective Systems

After completing the chapter, the student should be able to:

- a. Identify the value of protective systems in protecting life and property.
- b. Identify and explain the operation of the various types of detection devices.
- c. Explain and recognize the types of sprinkler systems and the components of each type.
- d. Identify the various types of sprinkler systems and the components of each type.
- e. Identify the piping arrangements of sprinkler systems and connections.

12. Protective Systems - Continued

- f. Demonstrate how to connect to a fire department connection.
- g. Identify control valves for systems and explain their operation.

- h. Explain the methods used to return a sprinkler system to service.
- i. Demonstrate techniques for stopping a flowing sprinkler head.
- j. Identify standpipe classes and types of systems.
- k. Identify piping and connections for standpipe systems.
- l. Demonstrate how to connect supply and attack lines to standpipe connections.
- m. Identify alarm systems for protective systems.
- n. Explain fire department procedures at protective properties.
- o. Identify other protective systems, their components, and their benefits and hazards.

13. Building Construction

After completing the chapter, the student should be able to:

- a. Describe the relationship between loads, imposition of loads, and forces.
- b. List and define four structural elements.
- c. Identify the effects of fire on five common building materials.
- d. List and define the five general types of building constructions.
- e. List and define hazards associated with alternative building construction types.
- f. List five building collapse hazards associated with fire suppression operations.
- g. List five indicators of collapse or structural failure that might be found during fire suppression operations.

14. Ladders

After completing the chapter, the student should be able to:

- a. Name the parts of a ladder.
- b. Describe the many functions for which a ladder can be used.
- c. Name the different types of mounted ladder apparatus;.
- d. Describe the function of the different types of ground ladders.
- e. Describe the care of ladders.
- f. Cite maintenance, cleaning and inspection functions for ladders.
- g. Exhibit ladder operations safety.
- h. Name different types of ladders.
- i. Describe the ladder selection process.
- j. Describe the concept behind different ladder raining techniques.
- k. Cite safety concerns of ladder and their use.
- l. Demonstrate skills associated with ladders, such as raining, leg locks, rope handling, mounting and dismounting of ladders, and use of roof ladders.
- m. Describe fundamentals of ladder placement.
- n. Determine how far away from the building a ladder should be placed

15. Ropes and Knots

After completing the chapter, the student should be able to:

- a. Identify the different materials that fire service rope is constructed from and their characteristics.
- b. Describe the differences between life safety and utility rope.
- c. Define the basic terminology used when discussing ropes and knots.
- d. Identify the basic knots used by the fire service, how to tie each of them, and their uses.
- e. Describe the proper method of inspection, maintenance, and storage of ropes.
- f. Describe the method of rigging basic firefighting equipment to be hoisted.
- g. Explain reasons for placing rope out of service.

16. Rescue Procedures

After completing the chapter, the student should be able to:

- a. Recognize the hazards associated with various rescue operations.
- b. Describe the differences between primary and secondary searches.
- c. Demonstrate the proper procedures for victim drags and carries.
- d. Define the proper terminology utilized during motor vehicle extrication operations.
- e. presented and the specific hazards associated with each of them.

17. Forcible Entry

After completing the chapter, the student should be able to:

- a. Identify forcible entry tool by common name and use.
- b. Describe the inspection and maintenance procedures for each type of forcible entry tool.
- c. Describe building features and methods of forcible entry for door, window, gates, walls, and floors.
- d. Identify five types of locks and describe their operations.
- e. List the steps for the three types of conventional forcible entry.
- f. Demonstrate conventional forcible entry on a variety of doors.
- g. Describe or demonstrate the through-the-lock forcible entry method.
- h. List or describe four construction features of windows and methods of gaining entry.
- i. List or describe three considerations of breaching walls.
- j. Explain the three considerations of tool assignments.

18. Ventilation

After completing the chapter, the student should be able to:

- a. Understand ventilation as a fire service tool.
- b. Know the principles, advantages and effects of ventilation.
- c. Identify the considerations for proper ventilation.
- d. Know the effects of fire and its by-products.
- e. Differentiate between flashover, backdraft (smoke explosion), and rollover.
- f. Recognize the effects of air movement in ventilation.
- g. Identify the types of ventilation.
- h. Identify the mechanism of ventilation.
- i. Describe ventilation techniques.
- j. Describe the need for roof ventilation.
- k. Identify safety considerations when venting operations are in progress.
- l. Describe the obstacles to ventilation.
- m. Identify the factors affecting ventilation.

19. Fire Suppression

After completing the chapter, the student should be able to:

- a. Identify structural fire considerations to be made prior to extinguishment
- b. Explain the process of fire moving from contents to structure.
- c. Discuss the resources a fire department considers important in fighting fire.
- d. Explain the fire tetrahedron in relation to wild land or ground cover firefighting.
- e. Discuss some of the features of topography to be considered in wild land firefighting.
- f. Identify some of the automotive structural dangers to firefighters in vehicle fires.
- g. Explain some of the components of flammable liquids and gasses that affect firefighting.
- h. Define a plan of action for fighting fire regarding attack modes and styles.
- i. Explain fire stream selection considerations that must be considered in firefighting.
- j. Explain tactical goals to be considered when fighting fire.
- k. Discuss the incident management system and how it affects the way fires are controlled.
- l. Explain the difference between offensive and defensive modes of attack.
- m. Discuss teamwork and its part in firefighting.
- n. Explain the concept of the two in / two out rule and how it affects structural firefighting procedures.
- o. Explain why caution must be observed in the overhaul phase of firefighting fire.

20. Salvage, Overhaul, and Fire Cause Determination

After completing the chapter, the student should be able to:

- a. Explain the purpose of salvage and overhaul operations.
- b. Explain the importance of salvage from a “customer Service” standpoint.
- c. Identify tools and equipment used in salvage and overhaul operations.

- d. Identify needed maintenance of salvage and overhaul tools and equipment Perform different identified salvage cover throws, folds and rolls.
 - e. Arrange a room's contents into a salvageable position.
 - f. Identify sprinkler system shutoff valves.
 - g. Shut off a flowing sprinkler head.
 - h. Explain how fire attack and ventilation assist in the salvage effort.
 - i. Explain where to search buildings for hidden fires.
 - j. Explain how to look for structural stability.
 - k. List debris removal techniques.
 - l. Explain the importance of evidence preservation.
 - m. Identify how to determine the area of origin of a fire.
 - n. Identify how to secure a building after emergency operations are complete.
21. Prevention, Public Education, and Pre-Incident Planning.
- After completing the chapter, the student should be able to:
- a. Describe the function of the Fire Prevention Division.
 - b. Understand the purpose and value of a quality fire prevention inspection program.
 - c. Prepare, conduct, and follow up a quality fire prevention inspection of business occupancy.
 - d. Identify typical violations found in business occupancies and initiate the appropriate corrective action.
 - e. Understand the value and goals of a home inspection program.
 - f. Conduct a fire prevention inspection of a residential occupancy.
 - g. Identify various types and levels of fire service public education programs.
 - h. Prepare and present a fire safety educational program.
 - i. Understand the necessity of pre-incident management for emergencies at target hazards.
 - j. Prepare a pre-incident management plan for target hazards.
- 22. Emergency Medical Services**
- After completing the chapter, the student should be able to:
- a. Explain the basic elements of an emergency medical system.
 - b. Describe and practice the principles of infection control and body substance isolation for all patients.
 - c. Perform an initial assessment on all patients, obtain vital signs, and conduct a focused history and physical exam for signs of illness and/or injury.
 - d. List the different types of bleeding in patients, demonstrate methods for controlling the bleeding, and be able to treat patients in shock.
 - e. Describe types of burns and ways to treat them.
 - f. Identify the effects of ingested poisonous or controlled substances, how to contact a poison control center, and how to treat patients who have been exposed to a caustic substance.
- 23. Firefighter Survival**
- After completing the chapter, the student should be able to:
- a. List three main components that lead to incident readiness.
 - b. Define the four key checks to ensure that PPE is ready for response.
 - c. List three types of personal accountability systems.
 - d. Define personal size-up.
 - e. Describe the three components that lead to "fitness for duty."
 - f. Name three practices that lead to team continuity.
 - g. Define risk/benefit.
 - h. List and briefly describe the three components of rehabilitation.
 - i. Describe the procedures that should be taken to establish and prepare for the assignment of a rapid intervention team.
 - j. List five steps that can lead to an organized rapid escape.
 - k. List three steps that should be taken when entrapment occurs.
 - l. Compare and contrast post-incident through patterns and critical incident stress.

24. Hazardous Materials: Laws, Regulations, and Standards.

After completing the chapter, the student should be able to:

- a. Explain the local emergency response plan and standard operation guidelines.

24. Hazardous Materials: Laws, Regulations, and Standards. - Continued

- b. Explain the student's role within these elements at the awareness level.
- c. Explain the notification process to request assistance.
- d. Explain the role of the local emergency planning committee.
- e. Explain the role of SARA Title III regulations and emergency response.
- f. Explain other regulations that have an effect on fire department activities.

25. Hazardous Materials: Recognition and Identification.

After completing the chapter, the student should be able to:

- a. Identify the nine hazard classes as defines by DOT.
- b. Identify the hazards associated with each hazard class.
- c. Identify the standard occupancies where hazardous materials may be used or stored.
- d. Identify the standard container shapes and sizes and common products.
- e. Identify both facility and transportation related markings and warning signs.
- f. Identify the standard transportation types for highway and rail.
- g. Explain the use of NFPA 704 system.
- h. Explain the use of transportation containers in identifying possible contents.
- i. Explain the location of emergency shutoffs on highway containers.
- j. Explain the importance of understanding chemical and physical properties of hazardous materials.

26. Hazardous Materials: Information Resources.

After completing the chapter, the student should be able to:

- a. Explain the terms used on Material Safety Data Sheets.
- b. Tell where MSDS are located.
- c. Identify the standard information available on MSDS.
- d. Use the Emergency Response Guidebook (ERG).
- e. List the types of assistance that can be provided by Chemtrec.
- f. Describe other resources that may be available in the community.

27. Hazardous Materials: Personal Protective Equipment.

After completing the chapter, the student should be able to:

- a. Describe the causes of harm.
- b. Explain the health hazards associated with chemical releases.
- c. Discuss various levels of PPE.
- d. Demonstrate the use of SCBA and other respiratory protection at chemical releases.
- e. Demonstrate the use of firefighting protective clothing at chemical releases.
- f. Explain the signs and symptoms of heat stress.

28. Hazardous Materials: Protective Actions.

After completing the chapter, the student should be able to:

- a. Discuss the various incidents management systems.
- b. Discuss the various methods of container breaching.
- c. Explain the four methods of vapor cloud movement.
- d. Explain the methods used to make isolation and evacuation decisions.
- e. Describe the use of hot, warm, and cold zone.
- f. Identify the use of air monitors in the determination zones.
- g. Discuss the use of incident levels to describe the severity of the incident.
- h. Describe common incidents within each hazard class.
- i. Discuss methods of emergency decontamination.
- j. Describe the five type of decontamination.
- k. Describe the various methods of accomplishing decontamination.

29. Product Control and Air Monitoring.

After completing the chapter, the student should be able to:

- a. Identify equipment that can determine hazardous environment and isolate areas.
- b. Describe available defensive operations for a release.
- c. Describe the various methods of damming, diking, diverting, and other defensive operations.

29. Product Control and Air Monitoring - Continued

- d. Explain what types of detection equipment are available to the first responder and equipment that a HAZMAT team might carry that could be utilized at a chemical release.

30. Terrorism Awareness.

After completing the chapter, the student should be able to:

- a. Discuss potential target locations.
- b. Discuss indicators of potential terrorist activities,
- c. Describe incident action to be taken at a terrorist attack.
- d. Describe additional hazards at a terrorist attack.
- e. Describe other specialized resources to assist with a terrorist attack.
- f. Describe methods of requesting federal assistance.
- g. Identify common agents that may be used in a terrorist attack.