

**LAW, PUBLIC SAFETY AND SECURITY (CAREER CLUSTER)**  
**CERTIFICATION-LEVEL FIREFIGHTER I**  
**COURSE CODE: 6514**

**NOTE:** This course is based on the learning objectives listed in IFSTA's *Essentials of Fire Fighting*, 7<sup>th</sup> Edition (2019) and *Hazardous Materials for First Responders*, 5<sup>th</sup> Edition, (2017), Stillwater, OK: Fire Protection Publications, Oklahoma State University. These objectives have been further modified by the South Carolina Fire Academy to meet the needs of the South Carolina fire service. In some cases, the numbering of the objectives may be different than in the SCFA curriculum and the textbook but they address the same concepts and skills.

Course completion alone does not meet the criteria for achieving national certification for Fire Fighter I. National-level firefighter certification testing is separate. The National Fire Protection Association (NFPA) establishes minimum standards for various levels of fire service certification. Requirements for meeting NFPA 1001 (2019), *Standard for Fire Fighter Professional Qualifications* and NFPA 1072 (2017), *Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications* can be viewed online at NFPA.org. After each objective listed below, the NFPA standard items that correspond to the objective are noted in parentheses.

**RECOMMENDED GRADE LEVELS:** 9 - 12

**CREDIT:** 1 unit (120 hours), 2 units (240 hours)

**PREREQUISITE:** None

**RESOURCES:** [Instructional Materials](#)

**A. STUDENT ORGANIZATIONS**

1. Identify the purpose and goals of a Career and Technology Student Organization (CTSO).
2. Explain how CTSOs are integral parts of specific clusters, majors, and/or courses.
3. Explain the benefits and responsibilities of being a member of a CTSO.
4. List leadership opportunities that are available to students through participation in CTSO conferences, competitions, community service, philanthropy, and other activities.
5. Explain how participation in CTSOs can promote lifelong benefits in other professional and civic organizations.

**B. TECHNOLOGY KNOWLEDGE**

1. Demonstrate proficiency and skills associated with the use of technologies that are common to a specific occupation.
2. Identify proper netiquette when using e-mail, social media, and other technologies for communication purposes.
3. Identify potential abuse and unethical uses of laptops, tablets, computers, and/or networks.

4. Explain the consequences of social, illegal, and unethical uses of technology (e.g., piracy; cyberbullying, illegal downloading; licensing infringement; inappropriate uses of software, hardware, and mobile devices in the work environment).
5. Discuss legal issues and the terms of use related to copyright laws, fair use laws, and ethics pertaining to downloading of images, photographs, documents, video, sounds, music, trademarks, Creative Commons, and other elements for personal use.
6. Describe ethical and legal practices of safeguarding the confidentiality of business-related information.
7. Describe possible threats to a laptop, tablet, computer, and/or network and methods of avoiding attacks.

### **C. PERSONAL QUALITIES AND EMPLOYABILITY SKILLS**

1. Demonstrate creativity and innovation.
2. Demonstrate critical thinking and problem-solving skills.
3. Demonstrate initiative and self-direction.
4. Demonstrate integrity.
5. Demonstrate work ethic.
6. Demonstrate conflict resolution skills.
7. Demonstrate listening and speaking skills.
8. Demonstrate respect for diversity.
9. Demonstrate customer service orientation.
10. Demonstrate teamwork.

### **D. PROFESSIONAL KNOWLEDGE**

1. Demonstrate global or “big picture” thinking.
2. Demonstrate career and life management skills and goal-making.
3. Demonstrate continuous learning and adaptability skills to changing job requirements.
4. Demonstrate time and resource management skills.
5. Demonstrates information literacy skills.
6. Demonstrates information security skills.
7. Demonstrates information technology skills.
8. Demonstrates knowledge and use of job-specific tools and technologies.
9. Demonstrate job-specific mathematics skills.
10. Demonstrates professionalism in the workplace.
11. Demonstrates reading and writing skills.
12. Demonstrates workplace safety.

### **E. INTRODUCTION TO FIRE SERVICE AND FIREFIGHTER SAFETY**

1. Explain the mission of the fire service. [4.1.1]
2. Describe how fire departments are organized. [4.1.1]
3. Describe the various specializations within the fire service. [4.1.1]
4. Describe fire department SOPs, rules, and regulations that affect a Fire Fighter I. [4.1.1, 4.1.2]
5. Explain ways that fire departments may interact with other organizations and agencies.

- [4.1.1]
6. Explain the roles and duties of a Fire Fighter I. [4.1.1]
  7. Describe fire and life safety initiatives aimed at reducing firefighter illnesses, injuries, and fatalities. [4.1.1]
  8. Describe the aspects of NFPA 1500 related to firefighter safety and health. [4.1.1]
  9. Describe fire department programs intended to reduce firefighter illnesses, injuries, and fatalities. [4.1.1, 4.3.10]
  10. Summarize general guidelines for operating safely at structural fire scenes. [4.3.3]
  11. Summarize safe practices for riding in fire service vehicles and apparatus. [4.3.2, 4.3.3]
  12. Explain the use of emergency scene lighting and equipment. [4.3.17]
  13. Explain the importance of personnel accountability systems. [4.2.4, 4.3.5]
  14. Summarize general guidelines for operating safely at highway/roadway incidents. [4.3.3]
  15. Demonstrate performance tasks.

**NOTE:** Also see the Courage to Be Safe objectives from the National Fallen Firefighters Foundation. For more information, see the program's website at <https://www.everyonegoeshome.com/training/courage-safe-training/>

## **F. FIRE DEPARTMENT COMMUNICATIONS**

1. Explain the procedures for receiving non-emergency calls. [4.2.2]
2. Describe the types of communications systems and equipment used to receive and process emergency calls. [4.2.1]
3. Explain the procedures for receiving and dispatching emergency calls. [4.2.1]
4. Describe radio equipment and procedures used for internal fire department communications. [4.2.1, 4.2.2, 4.2.3]
5. Demonstrate performance tasks.

## **G. BUILDING CONSTRUCTION**

1. Differentiate among types of building construction. [4.3.12]
2. Describe the construction of floors, ceilings, and walls. [4.3.4, 4.3.12]
3. Explain how basements and stairs may impact fire-fighting operations. [4.3.12]
4. Compare the construction of different roof types. [4.3.12]
5. Describe the construction and operation methods of different types of doors. [4.3.4]
6. Describe the construction and operation methods of different types of windows. [4.3.4]

## **H. FIRE DYNAMICS**

1. Explain the basic principles of fire science. [4.3.11]
2. Describe how thermal energy impacts fire behavior. [4.3.11, 4.3.12]
3. Explain the function of fuel within the combustion process. [4.3.10, 4.3.11]
4. Explain the function of oxygen within the combustion process. [4.3.11]
5. Explain the self-sustained chemical reaction involved in flaming combustion. [4.3.11]
6. Differentiate among the stages of fire development. [4.3.11, 4.3.12]

7. Explain how fire-fighting operations can influence fire behavior in a structure. [4.3.11]
8. Describe how building construction and layout affects fire development. [4.3.10, 4.3.11]

## **I. FIREFIGHTER PERSONAL PROTECTIVE EQUIPMENT**

1. Describe the various types and uses of personal protective equipment (PPE) worn by firefighters. [4.1.1, 4.3.2, 4.3.3]
2. Describe the inspection, cleaning, and maintenance of PPE. [4.1.2]
3. Describe conditions that require the use of respiratory protection equipment. [4.3.1]
4. Identify SCBA components. [4.3.1]
5. Describe SCBA limitations. [4.3.1]
6. Describe the procedures for donning and doffing SCBA. [4.3.1]
7. Explain the process of inspecting and cleaning SCBA. [4.5.1]
8. Describe methods of refilling, replacing, and storing SCBA cylinders. [4.3.1, 4.5.1]
9. Describe safety considerations for working in and exiting a hazardous atmosphere while wearing SCBA. [4.3.1]
10. Demonstrate performance tasks.

## **J. PORTABLE FIRE EXTINGUISHERS**

1. Distinguish among the five classifications of portable fire extinguishers. [4.3.16]
2. Distinguish among the various types of portable fire extinguishers. [4.3.16]
3. Describe the process of selecting and using a portable fire extinguisher. [4.3.16]
4. Demonstrate performance tasks.

## **K. ROPES AND KNOTS**

1. Differentiate between life safety rope and utility rope. [4.3.20]
2. Describe the various materials and methods used to construct ropes. [4.3.20]
3. Describe the procedures for inspecting, cleaning, and maintaining ropes. [4.3.20, 4.5.1]
4. Describe how webbing is used, inspected, maintained, and stored. [4.5.1]
5. Identify types of knots. [4.3.20]
6. Describe the procedure for hoisting various tools and equipment. [4.1.2, 4.3.20]
7. Explain how ropes and knots are used during rescues and at other emergencies. [4.3.3, 4.3.9]
8. Demonstrate performance tasks.

## **L. GROUND LADDERS**

1. Identify the parts of a ladder. [4.3.6]
2. Differentiate among types of ladders. [4.3.6, 4.3.11, 4.3.12]
3. Describe the process of cleaning, inspecting, and maintaining a ladder. [4.5.1]
4. Describe safe practices for using ladders. [4.3.6, 4.3.11, 4.3.12]

5. Describe the process of carrying a ladder. [4.3.6, 4.3.11, 4.3.12]
6. Describe the proper procedure for placing a ground ladder. [4.3.6, 4.3.9, 4.3.11, 4.3.12]
7. Describe ways to secure a ground ladder. [4.3.6]
8. Describe methods for raising and lowering a ladder. [4.3.6, 4.3.11, 4.3.12]
9. Describe how to safely work from a ladder. [4.3.9, 4.3.10, 4.3.11, 4.3.12]
10. Describe methods to assist a victim down a ladder. [4.3.9]
11. Demonstrate performance tasks.

## **M. FORCIBLE ENTRY**

1. Describe the basic principles of forcible entry. [4.3.4, 4.3.11]
2. Describe forcible entry tools. [4.3.4, 4.3.9]
3. Explain considerations for forcible entry tool safety. [4.3.4]
4. Explain how to carry forcible entry tools. [4.3.4]
5. Describe how to clean and maintain forcible entry tools. [4.5.1]
6. Describe methods of forcing entry through doors. [4.3.4, 4.3.9, 4.3.11]
7. Describe methods for forcing entry through windows. [4.3.4, 4.3.9, 4.3.11]
8. Describe methods for breaching walls. [4.3.4, 4.3.9]
9. Demonstrate performance tasks.

## **N. STRUCTURAL SEARCH AND RESCUE**

1. Explain best practices to ensure firefighter survival during interior operations. [4.2.4, 4.3.5, 4.3.9]
2. Describe air-monitoring operations. [4.3.21]
3. Describe structural search and rescue operations. [4.3.5, 4.3.9]
4. Describe victim removal methods. [4.2.4, 4.3.5, 4.3.9]
5. Describe MAYDAY protocols. [4.2.4, 4.3.5]
6. Describe emergency evacuation methods. [4.2.4, 4.3.1, 4.3.5, 4.3.9]
7. Describe rapid intervention crew equipment and duties. [4.3.9]
8. Demonstrate performance tasks.

## **O. TACTICAL VENTILATION**

1. Explain why tactical ventilation is performed at a structure fire. [4.3.11, 4.3.12]
2. Describe safety considerations related to tactical ventilation. [4.3.11, 4.3.12]
3. Describe ventilation tools and equipment. [4.3.11, 4.3.12, 4.5.1]
4. Describe horizontal ventilation. [4.3.11]
5. Describe vertical ventilation. [4.3.12]
6. Describe considerations related to the ventilation of basements and other special compartments. [4.3.11, 4.3.12]
7. Demonstrate performance tasks.

## **P. FIRE HOSE**

1. Describe characteristics of fire hose. [4.3.8]
2. Describe the inspection, care, and maintenance of fire hose. [4.5.2]
3. Explain methods of rolling hose. [4.5.2]
4. Demonstrate performance tasks.

## **Q. HOSE OPERATIONS AND HOSE STREAMS**

1. Describe methods of supplying water for firefighting operations. [4.3.15]
2. Describe methods used to deploy fire hose. [4.3.10, 4.3.15]
3. Describe methods of advancing hoselines. [4.3.7, 4.3.10]
4. Differentiate among types of hose streams and nozzles. [4.3.10]
5. Explain how to operate different types of hoselines, nozzles, and master stream devices. [ 4.3.7, 4.3.8, 4.3.10]
6. Demonstrate performance tasks.

## **R. FIRE SUPPRESSION**

1. Explain the science behind fire suppression. [4.3.10, 4.3.11]
2. Describe methods for suppressing structural fires. [4.3.8, 4.3.10, 4.3.13]
3. Explain the role of firefighters with regards to supporting fire protection systems during fire suppression. [ 4.3.13, 4.3.14]
4. Explain the duties of firefighters related to building utilities. [4.3.18]
5. Describe the process of attacking a vehicle fire. [4.3.7]
6. Describe the process of attacking fires in exterior Class A materials. [4.3.8]
7. Describe ground cover fire attack. [4.3.19]
8. Demonstrate performance tasks.

## **S. OVERHAUL, PROPERTY CONSERVATION, AND SCENE PRESERVATION**

1. Describe overhaul. [4.3.8, 4.3.10, 4.3.13]
2. Explain how to conserve property at a fire scene. [4.3.14, 4.5.1]
3. Describe the duties that firefighters must perform to protect and preserve a fire scene. [ 4.3.8, 4.3.13, 4.3.14]
4. Demonstrate performance tasks.

## **T. NATIONAL INCIDENT MANAGEMENT SYSTEM-INCIDENT COMMAND SYSTEM**

**NOTE:** The following objectives relate to the Fire Fighter I and II sections of NFPA 1001 and 1072. Instructors may use this information when discussing fire service organizational structure in Fire Fighter I and/or as a refresher in Fire Fighter II.

1. Describe the function of each section within the NIMS-ICS organizational structure. [4.1; NFPA 1072, 5.4.1]
2. Explain the process of establishing and transferring command of an incident. [NFPA 1072, 5.4.1]
3. Identify the traits and values of an effective leader. [NFPA 1072, 5.4.1]

4. Explain how incidents are managed. [5.1; NFPA 1072, 5.4.1]
5. Describe the use of an Incident Action Plan. [NFPA 1072, 5.4.1]

## **U. HAZARDOUS MATERIALS AWARENESS**

### **MODULE 1**

1. Define a hazardous materials incident. [NFPA 1072, 4.2.1]
2. Describe roles and responsibilities of first responders in hazardous materials incidents.
3. Recognize ways that hazardous materials harm people. [NFPA 1072, 4.2.1]
4. List hazardous materials regulations, definitions, and statistics.

### **MODULE 2**

1. Identify the seven clues to the presence of hazardous materials. [NFPA 1072, 4.2.1]
2. Explain how pre-incident plans, occupancy types, and locations may indicate the presence of hazardous materials. [NFPA 1072, 4.2.1]
3. Identify basic container shapes that indicate the presence and hazards of hazardous materials. [NFPA 1072, 4.2.1]
4. Describe ways that U.S. transportation placards, labels, and markings indicate the presence and hazards of hazardous materials. [NFPA 1072, 4.2.1]
5. Identify other markings and colors that indicate the presence of hazardous materials. [NFPA 1072, 4.2.1]
6. Describe ways written resources are used to identify hazardous materials and their hazards. [NFPA 1072, 4.2.1]
7. Explain the limited role of the five senses for identifying hazardous materials.
8. Explain the role of monitoring and detection devices for Awareness Level person.

### **MODULE 3**

1. Recognize notification procedures. [NFPA 1072, 4.4.1]
2. Describe ways first responders use the Emergency Response Guide book at hazardous materials incidents. [NFPA 1072, 4.2.1, 4.3.1]
3. Explain the role of first responders in initiating protective actions. [NFPA 1072, 4.3.1]
4. Identify actions that Awareness level personnel should take when responding to terrorist incidents. [NFPA 1072, 4.2.1, 4.3.1]
5. Make appropriate notifications of a hazardous materials incident. [NFPA 1072, 4.4.1]
6. Identify indicators and hazards present at a hazardous materials incident using approved reference sources. [NFPA 1072, 4.2.1]
7. Implement protective actions at a hazardous materials incident. [NFPA 1072, 4.2.1, 4.3.1]

## **V. HAZARDOUS MATERIALS OPERATIONS**

### **MODULE 1**

1. Identify states of matter as they relate to hazardous materials. [NFPA 1072, 5.2.1]
2. Explain physical properties that aid in identifying potential hazards and predicting behavior of hazardous materials. [NFPA 1072, 5.2.1]
3. Explain chemical properties that aid in identifying potential hazards and predicting behavior of hazardous materials. [NFPA 1072, 5.2.1]
4. Define the hazard classes. [NFPA 1072, 5.2.1]
5. Describe actions taken to gather sufficient information to identify the hazardous material(s)/substance(s) involved in a hazmat incident. [NFPA 1072, 5.2.1, 5.3.1]

### **MODULE 2**

1. Describe methods of identifying potential outcomes. [NFPA 1072, 5.2.1]
2. Explain the role of the General Hazardous Materials Behavior Model in predicting the behavior of containers. [NFPA 1072, 5.2.1]
3. Recognize general container types and their associated behaviors. [NFPA 1072, 5.2.1]
4. Describe the types of bulk facility storage tanks and their associated hazards. [NFPA 1072, 5.2.1]
5. Describe the types of cargo tank trucks and their associated hazards. [NFPA 1072, 5.2.1]
6. Describe the types of tank cars and their associated hazards. [NFPA 1072, 5.2.1]
7. Describe the types of intermodal tanks and their associated hazards. [NFPA 1072, 5.2.1]
8. Describe types of bulk transportation containers and their associated hazards. [NFPA 1072, 5.2.1]
9. Describe other types of bulk and non-bulk containers and their associated hazards. [NFPA 1072, 5.2.1]
10. Analyze a hazardous materials scenario to identify potential hazards. [NFPA 1072, 5.2.1].

### **MODULE 3**

1. Explain predetermined procedures. [NFPA 1072, 5.3.1]
2. List incident priorities for hazardous materials incidents. [NFPA 1072, 5.3.1]
3. Describe the process of size-up and hazard and risk assessment. [NFPA 1072, 5.3.1]
4. Define hazardous materials incident levels. [NFPA 1072, 5.3.1]
5. Explain the three modes of operations at hazardous materials incidents. [NFPA 1072, 5.3.1]
6. Identify methods for planning the initial response. [NFPA 1072, 5.3.1]
7. Distinguish common response objectives and action options at hazardous materials incidents. [NFPA 1072, 5.3.1]
8. Identify actions available at a hazardous materials incident. [NFPA 1072, 5.3.1]



## **MODULE 4**

1. Describe the NIMS-ICS organizational functions that help initiate incident management. [NFPA 1072, 5.4.1]
2. Describe secondary NIMS-ICS organizational functions. [NFPA 1072, 5.4.1]
3. Explain ways of implementing response objectives and action options. [NFPA 1072, 5.2.1, 5.3.1, 5.4.1]
4. Identify processes for evaluating progress. [NFPA 1072, 5.4.1, 5.6.1]
5. Demonstrate performance tasks.

## **MODULE 5**

1. Define terrorism. [NFPA 1072, 5.2.1]
2. Explain ways of identifying terrorist attacks. [NFPA 1072, 5.2.1]
3. Describe the range of tactics that may be used in a terrorist attack. [NFPA 1072, 5.2.1]
4. Identify indicators and types of explosive attacks and devices. [NFPA 1072, 5.2.1]
5. Identify indicators and types of chemical attacks. [NFPA 1072, 5.2.1]
6. Identify indicators and types of biological attacks. [NFPA 1072, 5.2.1]
7. Identify indicators and types of possible radiological attacks. [NFPA 1072, 5.2.1]
8. Identify general hazards at illicit laboratories. [NFPA 1072, 5.3.1]
9. Recognize illegal hazmat dumps. [NFPA 1072, 5.2.1]
10. Describe hazmat operations after disasters. [NFPA 1072, 5.2.1]

## **MODULE 6**

1. Describe respiratory protection used at hazardous materials incidents. [NFPA 1072, 5.3.1, 5.4.1, 6.2.1]
2. Explain varieties of protective clothing worn at hazardous materials incidents. [NFPA 1072, 5.3.1, 5.4.1, 6.2.1]
3. Describe personal protective equipment ensembles used during hazardous materials incidents. [NFPA 1072, 5.3.1, 6.2.1, 6.3.1, 6.4.1, 6.5.1, 6.6.1, 6.7.1, 6.8.1, 6.9.1]
4. Explain PPE related stresses. [NFPA 1072, 5.4.1, 6.2.1]
5. Describe procedures for safely using PPE. [NFPA 1072, 5.3.1, 5.4.1, 5.5.1, 6.2.1, 6.3.1, 6.4.1, 6.5.1, 6.6.1, 6.7.1, 6.8.1, 6.9.1]
6. Identify procedures for inspection, storage, testing, maintenance, and documentation of PPE. [NFPA 1072, 5.4.1, 6.2.1]
7. Select appropriate PPE to address a hazardous materials scenario. [NFPA 1072, 5.4.1, 6.2.1, 6.3.1, 6.4.1, 6.5.1, 6.6.1, 6.7.1, 6.8.1, 6.9.1]

## **MODULE 7**

1. Define the different types of decontamination that may be used at a hazmat incident. [NFPA 1072, 5.3.1, 5.5.1]
2. Identify decontamination methods. [NFPA 1072, 6.3.1, 6.4.1]
3. Define gross decontamination. [NFPA 1072, 5.4.1]
4. Explain processes for emergency decontamination. [NFPA 1072, 5.3.1, 5.5.1, 6.2.1]
5. Explain processes for technical decontamination. [NFPA 1072, 6.2.1, 6.3.1, 6.4.1]
6. Explain processes for mass decontamination. [NFPA 1072, 6.3.1]

7. Identify victim management activities during decontamination operations.
8. Recognize general guidelines for decontamination operations. [NFPA 1072, 6.3.1]
9. Describe decontamination implementation. [NFPA 1072, 6.3.1, 6.4.1]
10. Explain decontamination termination activities. [NFPA 1072, 6.3.1, 6.4.1]
11. Perform gross decontamination. [NFPA 1072, 5.4.1]
12. Perform emergency decontamination. [NFPA 1072, 5.5.1]
13. Perform technical decontamination on ambulatory people. [NFPA 1072, 6.4.1]
14. Perform technical decontamination on non-ambulatory victims. [NFPA 1072, 6.4.1]
15. Perform mass decontamination on ambulatory people. [NFPA 1072, 6.3.1]
16. Perform mass decontamination on non-ambulatory victims. [NFPA 1072, 6.3.1]

## **MODULE 8**

1. Describe methods of spill control. [NFPA 1072, 6.6.1]
2. Describe methods of leak control. [NFPA 1072, 6.6.1]
3. Describe methods of fire control at a hazardous materials incident. [NFPA 1072, 6.6.1]
4. Perform absorption/adsorption. [NFPA 1072, 6.6.1]
5. Perform damming. [NFPA 1072, 6.6.1]
6. Perform diking operations. [NFPA 1072, 6.6.1]
7. Perform diversion. [NFPA 1072, 6.6.1]
8. Perform retention. [NFPA 1072, 6.6.1]
9. Perform vapor suppression. [NFPA 1072, 6.6.1]
10. Perform vapor dispersion. [NFPA 1072, 6.6.1]
11. Perform dilution. [NFPA 1072, 6.6.1]
12. Perform remote valve shutoff or activate emergency shutoff device. [NFPA 1072, 6.6.1]