Fire and Rescue I; Every year, fires and other emergencies take thousands of lives and destroy property worth billions of dollars. Firefighters and emergency services workers help protect the public against these dangers by rapidly responding to a variety of emergencies. They are frequently the first emergency personnel at the scene of a traffic accident or medical emergency and may be called upon to put out a fire, treat injuries or perform other vital functions. The Fire and Rescue curriculum may include five Indiana state fire certifications: (1) Mandatory, (2) Firefighter I, (3) Firefighter II, (4) Hazardous Materials Awareness, (5) Hazardous Materials Operations. An additional two industry certifications may be earned by adding (6) First Responder, and (7) Emergency Medical Technician-Basic to the curriculum.

- DOE Code: 5820
- Recommended Grade Level: Grade 11-12
- Recommended Prerequisites: None
- Credits: 2-3 credits per semester, maximum of 6 credits
- Counts as a Directed Elective or Elective for the General, Core 40, Core 40 with Academic Honors and Core 40 with Technical Honors diplomas
- This course is aligned with postsecondary courses for Dual Credit:
  - Ivy Tech
    - FIRE 100- Fire Suppression
    - FIRE 116 & 117- Firefighter I & II
    - PSAF 115-p Hazmat Awareness & Operations

Dual Credit
This course provides the opportunity for dual credit for students who meet postsecondary requirements for earning dual credit and successfully complete the dual credit requirements of this course.

Application of Content and Multiple Hour Offerings
Intensive laboratory applications are a component of this course and may be either school based or work based or a combination of the two. Work-based learning experiences should be in a closely related industry setting. Instructors shall have a standards-based training plan for students participating in work-based learning experiences. When a course is offered for multiple hours per semester, the amount of laboratory application or work-based learning needs to be increased proportionally.

Career and Technical Student Organizations (CTSOS)
Career and Technical Student Organizations are considered a powerful instructional tool when integrated into Career and Technical Education programs. They enhance the knowledge and skills students learn in a course by allowing a student to participate in a unique program of career and leadership development. Students should be encouraged to participate in SkillsUSA, the CTSO for this area.

Content Standards
Domain – Orientation/History
Core Standard 1 Students examine fire service and their role within that service to assess practices and procedures.

Standards
FRI-1.1 Describe the history and culture of the fire service
FRI-1.2 Describe the mission of the fire service
FRI-1.3 Define fire department organizational principles
FRI-1.4 Distinguish among functions of fire companies
FRI-1.5 Summarize primary knowledge and skills the firefighter must have to function effectively
FRI-1.6 Distinguish among the primary roles of fire service personnel
FRI-1.7 Distinguish among policies, procedures, and standard operating procedures (SOPs)
FRI-1.8 Summarize components of the Incident Command System (ICS)
FRI-1.9 Distinguish among the functions of the major subdivisions within the ICS structure
FRI-1.10 Define ICS terms
FRI-1.11 Discuss fire service interaction with other organizations

Domain – Firefighter Safety and Health
Core Standard 2 Students establish a basic understanding of safety with respect to the scene, the station, and places in between.

Standards
FRI-2.1 List ways to prevent firefighter injuries
FRI-2.2 Discuss National Fire Protection Association standards related to firefighter health and safety
FRI-2.3 Discuss Occupational Safety and Health Administration regulations
FRI-2.4 Summarize the IFSTA Principles of Risk Management
FRI-2.5 List the main goals of a safety program
FRI-2.6 Discuss firefighter health considerations and employee assistance and wellness programs
FRI-2.7 List guidelines for riding safely on the apparatus
FRI-2.8 Discuss safety in the fire station
FRI-2.9 Describe ways to maintain safety in training
FRI-2.10 Explain how to maintain and service equipment used in training
FRI-2.11 Discuss emergency scene preparedness
FRI-2.12 Discuss emergency scene safety
FRI-2.13 Summarize general guidelines for scene management
FRI-2.14 Explain the importance of personnel accountability
FRI-2.15 Summarize basic interior operations techniques
FRI-2.16 Describe emergency escape and rapid intervention
FRI-2.17 Respond to an incident, correctly mounting and dismounting an apparatus
FRI-2.18 Set up and operate in work areas at an incident using traffic and scene control devices

Domain – Fire Behavior
Core Standard 3 Students analyze the scientific principles behind fire to assess fire behavior and
appropriate fire fighting procedures.

Standards
FRI-3.1 Describe physical and chemical changes of matter related to fire
FRI-3.2 Discuss modes of combustion, the fire triangle, and the fire tetrahedron
FRI-3.3 Explain the difference between heat and temperature
FRI-3.4 Describe sources of heat energy
FRI-3.5 Discuss the transmission of heat
FRI-3.6 Explain how the physical states of fuel affect the combustion process
FRI-3.7 Explain how oxygen concentration affects the combustion process
FRI-3.8 Discuss the self-sustained chemical reaction involved in the combustion process
FRI-3.9 Describe common products of combustion
FRI-3.10 Distinguish among classifications of fires
FRI-3.11 Describe the stages of fire development within a compartment
FRI-3.12 Summarize factors that affect fire development within a compartment
FRI-3.13 Describe methods used to control and extinguish fire

Domain 4 – Building Construction
Core Standard 4 Students evaluate building structures and materials to assess structural integrity during a fire.

Standards
FRI-4.1 Describe common building materials
FRI-4.2 Describe construction types and the effect fire has on the structural integrity of the construction type
FRI-4.3 Identify the primary strengths and weaknesses of construction types
FRI-4.4 Describe dangerous building conditions created by a fire or by actions taken while trying to extinguish a fire
FRI-4.5 Identify indicators of building collapse
FRI-4.6 List actions to take when imminent building collapse is suspected
FRI-4.7 Describe hazards associated with lightweight and truss construction

Domain – Personal Protective Equipment
Core Standard 5 Students apply concepts of proper equipment usage and storage, to maintain and effectively utilize protective equipment.

Standards
FRI-5.1 Describe the purpose of protective clothing and equipment
FRI-5.2 Describe characteristics of protective clothing and equipment
FRI-5.3 Summarize guidelines for the care of personal protective clothing
FRI-5.4 List the four common respiratory hazards associated with fires and other emergencies
FRI-5.5 Distinguish among characteristics of respiratory hazards
FRI-5.6 Describe physical, medical, and mental factors that affect the firefighter’s ability to use respiratory protection effectively
FRI-5.7 Describe equipment and air-supply limitations of SCBA
FRI-5.8 Discuss effective air management
FRI-5.9 Distinguish among characteristics of air-purifying respirators, open-circuit SCBA, and closed-circuit SCBA
FRI-5.10 Describe basic SCBA component assemblies
FRI-5.11 Discuss storing protective breathing apparatus
FRI-5.12 Summarize recommendations for the use of PASS devices
FRI-5.13 Describe precautionary safety checks for SCBA
FRI-5.14 Discuss general donning and doffing considerations for SCBA
FRI-5.15 Summarize general items to check in daily, weekly, monthly, and annual SCBA inspections
FRI-5.16 Summarize safety precautions for refilling SCBA cylinders
FRI-5.17 Discuss safety precautions for SCBA use
FRI-5.18 Describe actions to take in emergency situations using SCBA
FRI-5.19 Discuss operating in areas of limited visibility while wearing SCBA
FRI-5.20 Discuss exiting areas with restricted openings under emergency conditions while wearing SCBA
FRI-5.21 Don PPE and SCBA for use at an emergency
FRI-5.22 Doff PPE and SCBA and prepare for reuse
FRI-5.23 Inspect personal protective equipment and SCBA for use at an emergency incident
FRI-5.24 Clean and sanitize PPE and SCBA
FRI-5.25 Demonstrate procedures for filling SCBA cylinders from various systems
FRI-5.25 Fill an SCBA cylinder from a cascade system
FRI-5.26 Fill an SCBA cylinder from a compressor/purifier
FRI-5.27 Perform emergency operations procedures for an SCBA
FRI-5.28 Exit a constricted opening while wearing standard SCBA
FRI-5.29 Change an SCBA cylinder (one person)
FRI-5.30 Change an SCBA cylinder (two person)

Domain-Portable Fire Extinguishers

Core Standard 6 Students evaluate various fire extinguishers to demonstrate how and when to use them at a fire scene.

Standards
FRI-6.1 Describe methods by which agents extinguish fire
FRI-6.2 List mechanisms by which portable extinguishers expel their contents
FRI-6.3 Distinguish among classifications of fires and the most common agents used to extinguish them
FRI-6.4 Describe types of extinguishers and their common uses
FRI-6.5 Discuss extinguishers and agents for metal fires
FRI-6.6 Explain the portable extinguisher rating system
FRI-6.7 Describe factors to consider in selecting the proper fire extinguisher
FRI-6.8 Describe items to check for immediately before using a portable fire extinguisher
FRI-6.9 Describe the PASS method of application
FRI-6.10 Summarize procedures that should be part of every fire extinguisher inspection
FRI-6.11 Discuss damaged portable fire extinguishers and obsolete portable fire extinguishers
FRI-6.12 Operate a stored pressure water extinguisher
FRI-6.13 Operate a dry chemical (ABC) extinguisher
FRI-6.14 Operate a carbon dioxide (CO2) extinguisher

Domain - Ropes and Knots
Core Standard 7 Students demonstrate the proper procedures for inspecting, maintaining storing, and utilizing rope to create knots used in various fire and rescue operations.

Standards
FRI-7.1 Compare and contrast the characteristics of life-safety rope and utility rope
FRI-7.2 Summarize criteria for reusing life-safety rope
FRI-7.3 Describe rope materials
FRI-7.4 Describe types of rope construction
FRI-7.5 Summarize basic guidelines for rope maintenance
FRI-7.6 Explain procedures for storing life-safety rope
FRI-7.7 Describe webbing and webbing construction
FRI-7.8 Describe parts of a rope and considerations in tying a knot
FRI-7.9 Describe knot characteristics and knot elements
FRI-7.10 Describe characteristics of knots commonly used in the fire service
FRI-7.11 Select commonly used rope hardware for specific applications
FRI-7.12 Summarize hoisting safety considerations
FRI-7.13 Discuss rescue rope and harness
FRI-7.14 Inspect, clean, and store rope
FRI-7.15 Coil and uncoil a rope
FRI-7.16 Create knots as specified for various fire and rescue operations

Domain - Rescue and Extrication
Core Standard 8 Students apply and adapt search techniques to perform rescue and extrication operations.

Standards
FRI-8.1 Distinguish between rescue and extrication operations
FRI-8.2 Summarize safety guidelines for search and rescue personnel operating within a burning building
FRI-8.3 Explain the objectives of a building search
FRI-8.4 Describe primary search and secondary search
FRI-8.5 Discuss conducting search operations
FRI-8.6 Explain what actions a firefighter should take when in distress
FRI-8.7  Describe actions that should be taken by a rapid intervention crew (RIC) when a firefighter is in distress
FRI-8.8  Discuss victim removal methods
FRI-8.9  Discuss emergency power and lighting equipment
FRI-8.10 Conduct a primary and secondary search
FRI-8.11 Exit a hazardous area using appropriate procedures
FRI-8.12 Demonstrate various drag procedures used to move victims
FRI-8.13 Perform various lift/carry procedures

**Domain: Forcible Entry**

**Core Standard 9** Students apply and adapt appropriate forcible entry techniques to enter various structures.

**Standards**

FRI-9.1  Select appropriate cutting tools for specific applications
FRI-9.2  Discuss manual and hydraulic prying tools
FRI-9.3  Discuss pushing/pulling tools and striking tools
FRI-9.4  Summarize forcible entry tool safety rules
FRI-9.5  Describe correct methods for carrying forcible entry tools
FRI-9.6  Summarize general care and maintenance practices for forcible entry tools
FRI-9.7  Explain items to look for in sizing up a door
FRI-9.8  Describe the characteristics of various types of swinging doors
FRI-9.10 Describe the characteristics of various types of sliding doors, revolving doors, and overhead doors
FRI-9.11 Explain how fire doors operate
FRI-9.12 Describe the characteristics of basic types of locks
FRI-9.13 Describe rapid-entry lockbox systems
FRI-9.14 Describe methods of forcible entry through doors
FRI-9.15 Describe methods of through-the-lock forcible entry for doors
FRI-9.16 Explain action that can be taken to force entry involving padlocks
FRI-9.17 Describe ways of gaining entry through gates and fences
FRI-9.18 List hazards in forcing windows
FRI-9.19 Describe types of windows and entry techniques
FRI-9.20 Describe techniques for breaching walls and floors
FRI-9.21 Clean, inspect, and maintain hand and power tools and equipment
FRI-9.22 Force entry through various doors, windows, walls and locks
FRI-9.23 Breach a hardwood floor

**Domain: Ground Ladders**

**Core Standard 10** Students evaluate ladder construction, ladder types, carrying, raising, and climbing ladders utilizing the appropriate equipment and safety procedures.

**Standards**
FRI-10.1 Describe parts of a ladder
FRI-10.2 Describe types of ground ladders used in the fire service
FRI-10.3 Discuss materials used for ladder construction
FRI-10.4 Discuss ladder maintenance and cleaning
FRI-10.5 Summarize items to check for when inspecting and service testing ladders
FRI-10.6 Summarize factors that contribute to safe ladder operation
FRI-10.7 Discuss selecting the proper ladder for the job
FRI-10.8 Summarize items to consider before removing and replacing ladders on apparatus
FRI-10.9 Describe proper procedures to follow when lifting and lowering ground ladders
FRI-10.10 Describe various types of ladder carries
FRI-10.11 Explain proper procedures for positioning ground ladders
FRI-10.12 Explain precautions to take before raising a ladder
FRI-10.13 Describe various types of ladder raises
FRI-10.14 Describe procedures for moving ground ladders
FRI-10.15 Describe heeling and tying in ground ladders
FRI-10.16 Apply guidelines for climbing ladders
FRI-10.17 Describe methods for lowering conscious or unconscious victims down ground ladders
FRI-10.18 Clean, inspect, and maintain a ladder
FRI-10.19 Tie the halyard
FRI-10.20 Raise a ladder using various methods and procedures
FRI-10.21 Deploy a roof ladder — One-firefighter method
FRI-10.22 Pivot a ladder — Two-firefighter method
FRI-10.23 Shift a ladder — One-firefighter method
FRI-10.24 Shift a ladder — Two-firefighter method
FRI-10.25 Leg lock on a ground ladder
FRI-10.26 Assist a conscious victim down a ground ladder
FRI-10.27 Remove an unconscious victim down a ground ladder
FRI-10.28 Select, carry and raise a ladder properly for various types of activities

**Domain: Ventilation**

**Core Standard 11** Students apply and adapt ventilation procedures using appropriate equipment to fight fires.

**Standards**

FRI-11.1 Describe reasons for fireground ventilation
FRI-11.2 List considerations that affect the decision to ventilate
FRI-11.3 Discuss factors that are taken into account when deciding the need for ventilation
FRI-11.4 Discuss vertical ventilation
FRI-11.5 List safety precautions to observe when undertaking vertical ventilation
FRI-11.6 List warning signs of an unsafe roof condition
FRI-11.7 Discuss roof coverings and using existing roof openings for vertical ventilation purposes
FRI-11.8 Discuss ventilation considerations for various types of roofs
FRI-11.9 Describe trench or strip ventilation
FRI-11.10 Explain procedures for ventilation of a conventional basement
FRI-11.11 List factors that can reduce the effectiveness of vertical ventilation
FRI-11.12 Discuss horizontal ventilation
FRI-11.13 Distinguish between advantages and disadvantages of forced ventilation
FRI-11.15 Discuss negative and positive-pressure ventilation
FRI-11.16 Compare and contrast positive pressure and negative pressure ventilation
FRI-11.17 Describe hydraulic ventilation
FRI-11.18 List disadvantages to the use of hydraulic ventilation
FRI-11.19 Explain the effects of building systems on fires or ventilation
FRI-11.20 Ventilate a flat roof
FRI-11.21 Ventilate a pitched roof
FRI-11.22 Demonstrate mechanical positive-pressure ventilation
FRI-11.23 Demonstrate horizontal hydraulic ventilation

Domain-Water Supply
Core Standard 12 Students apply concepts to accessing available water reserves to fight fires on scene.

Standards
FRI-12.1 Describe dry-barrel and wet-barrel hydrants
FRI-12.2 Discuss fire hydrant marking and location
FRI-12.3 Summarize potential problems to look for when inspecting fire hydrants
FRI-12.4 Explain the process of fire hydrant testing
FRI-12.5 Discuss alternative water supplies
FRI-12.6 Discuss rural water supply operations
FRI-12.7 Operate a hydrant
FRI-12.8 Make soft-sleeve and hard suction hydrant connections
FRI-12.9 Connect and place a hard suction hose for drafting from a static water source
FRI-12.10 Deploy a portable water tank

Domain-Fire Hose
Core Standard 13 Students evaluate the various types of hoses used in the fire service and the safe and effective methods to move and store hoses.

Standards
FRI-13.1 Discuss fire hose sizes
FRI-13.2 Describe types of fire hose damage and practices to prevent such damage
FRI-13.3 Distinguish between characteristics of threaded couplings and nonthreaded couplings

FRI-13.4 Discuss care of fire hose couplings
FRI-13.5 List general hose loading guidelines
FRI-13.6 Describe common hose loads
FRI-13.7 Describe hose load finishes
FRI-13.8 Discuss preconnected hose loads for attack lines
FRI-13.9 List guidelines when laying hose
FRI-13.10 Describe the basic hose lays for supply hose
FRI-13.11 Describe procedures for handling preconnected and other hose

FRI-13.12 List general safety guidelines that should be followed when advancing a hoseline into a burning structure
FRI-13.13 Discuss procedures for advancing hose
FRI-13.14 Describe techniques for operating hoselines
FRI-13.15 Inspect and maintain hose
FRI-13.16 Make specified hose rolls
FRI-13.17 Demonstrate coupling and uncoupling procedures for hoses
FRI-13.18 Make various specified hose loads
FRI-13.19 Connect to a hydrant using a forward lay
FRI-13.20 Make the reverse hose lay
FRI-13.21 Differentiate between advancement procedures for various hose loads
FRI-13.22 Show various methods for advancing hoses
FRI-13.23 Advance a line into a structure
FRI-13.24 Advance a line up and down an interior stairway
FRI-13.25 Demonstrate procedures for advancing charged and uncharged lines up a ladder into a window
FRI-13.26 Extend a hoseline
FRI-13.27 Simulate the procedure for controlling a loose hoseline
FRI-13.28 Replace a burst line
FRI-13.29 Operate a charged attack line from a ladder

Domain-Fire Streams

Core Standard 14 Students analyze the various types of nozzles, water application, and water sources to extinguish fires at a fire scene.

Standards
FRI-14.1 List methods that are used with fire streams to reduce the heat from a fire and provide protection to firefighters and exposures
FRI-14.2 Discuss the extinguishing properties of water
FRI-14.3 Describe friction loss
FRI-14.4 Define water hammer
FRI-14.5 Distinguish among characteristics of fire stream sizes
FRI-14.6 Discuss types of streams and nozzles
FRI-14.7 Discuss handling handline nozzles
FRI-14.8 Describe types of nozzle control valves
FRI-14.9 List checks that should be included in nozzle inspections
FRI-14.10 Operate various nozzles

Domain – Fire Control
Core Standard 15 Students apply and adapt fire fighting techniques to battle specific blazes.

Standards
FRI-15.1 Describe initial factors to consider when suppressing structure fires
FRI-15.2 Summarize considerations prior to entering a burning building
FRI-15.3 Explain the gas cooling technique
FRI-15.4 Describe direct attack, indirect attack, and combination attack
FRI-15.5 Discuss deploying master stream devices
FRI-15.6 Describe aerial devices used to deliver elevated master streams
FRI-15.7 Describe actions and hazards associated with suppressing Class C fires
FRI-15.8 List electrical hazards and guidelines for electrical emergencies
FRI-15.9 Discuss responsibilities of companies in structural fires
FRI-15.10 Explain actions taken in attacking fires in different levels of structures
FRI-15.11 Discuss structure fires in properties protected by fixed systems
FRI-15.12 Select appropriate actions to take when attacking fires in various scenarios
FRI-15.13 Summarize influences on wildland fire behavior: fuel, weather, and topography
FRI-15.14 Describe parts of a wildland fire
FRI-15.15 List wildland protective clothing and equipment
FRI-15.16 Describe methods used to attack wildland fires
FRI-15.17 List ten standard fire fighting orders when fighting wildland fires
FRI-15.18 Attack a structure fire — Exterior attack
FRI-15.19 Deploy and operate a master stream device
FRI-15.20 Turn off building utilities
FRI-15.21 Attack a structure fire (Above, Below, and Grade Level) — Interior attack
FRI-15.22 Demonstrate procedures for battling fires in various scenarios

Domain – Fire Detection, Alarm, and Suppression Systems
Core Standard 16 Students analyze various fire detection, alarm, and suppression systems to properly utilize them on fire scenes.

Standards
FRI-16.1 List functions of fire detection, alarm, and suppression systems
FRI-16.2 Discuss general automatic sprinkler protection and types of coverage
FRI-16.3 Describe control valves and operating valves used in sprinkler systems
FRI-16.4 Describe major applications of sprinkler systems
FRI-16.5 Discuss operations at fires in protected properties
FRI-16.6 Operate a sprinkler system control valve
FRI-16.7 Manually stop the flow of water from a sprinkler
FRI-16.8 Connect hoseline to a sprinkler system FDC

Domain-Loss Control
Core Standard 17 Students apply and adapt salvage and overhaul procedures to ensure that structural integrity is not compromised, all hidden fires are discovered and extinguished, fire cause evidence is preserved and all debris and routing water is removed from structure.

Standards
FRI-17.1 Explain the philosophy of loss control
FRI-17.2 Discuss planning and procedures for salvage operations
FRI-17.3 Describe salvage covers, salvage cover maintenance, and equipment used in salvage operations
FRI-17.4 Summarize basic principles of salvage cover deployment
FRI-17.5 Summarize methods used to catch and route water from fire fighting operations and cover openings using salvage covers
FRI-17.6 Discuss overhaul operations
FRI-17.7 Describe tools and equipment used in overhaul
FRI-17.8 Discuss fire safety during overhaul
FRI-17.9 Discuss locating hidden fires
FRI-17.10 Summarize the overhaul process
FRI-17.11 Clean, inspect, and repair a salvage cover
FRI-17.12 Perform various salvage cover operations
FRI-17.13 Construct a water chute with and without pike poles
FRI-17.14 Construct a catchall

Domain-Protecting Fire Scene Evidence
Core Standard 18 Students establish security procedures to identify and correctly process evidence at a fire scene.

Standards
FRI-18.1 Describe signs and indications of an incendiary fire
FRI-18.2 Summarize important observations to be made en route, after arriving at the scene, and during fire fighting operations
FRI-18.3 Discuss firefighter conduct and statements at the scene
FRI-18.4 Explain firefighter responsibilities after the fire
FRI-18.5 Discuss protecting and preserving evidence

Domain-Fire Department Communications
Core Standard 19 Students initiate responses to an emergency incident using fire department operating
procedures and equipment to ensure report is accurate and promptly relayed.

**Standards**

FRI-19.1  Describe communication responsibilities of the firefighter  
FRI-19.2  Summarize necessary skills for fire department communications  
FRI-19.3  Describe basic communications equipment used in telecommunications centers  
FRI-19.4  Describe basic business telephone courtesies  
FRI-19.5  Explain how a firefighter should proceed when receiving emergency calls from the public  
FRI-19.6  Describe types of public alerting systems  
FRI-19.7  Describe procedures that the public should use to report a fire or other emergency  
FRI-19.8  Discuss ways of alerting fire department personnel to emergencies  
FRI-19.10 Summarize guidelines for radio communications  
FRI-19.11 Describe information given in arrival and progress reports  
FRI-19.12 Explain the purpose of tactical channels  
FRI-19.13 Discuss calls for additional resources and emergency radio traffic  
FRI-19.14 Discuss evacuation signals and personnel accountability reports  
FRI-19.15 Use a portable radio for routine and emergency traffic  
FRI-19.16 Handle business calls and reports of emergencies

**Domain: Basic Pre-Hospital Emergency Care**

**Core Standard 20** Students apply emergency care concepts to properly diagnose and treat victims at fire scenes.

**Standards**

FRI-20.1  Discuss the importance of body substance isolation (BSI)  
FRI-20.2  Describe the components of personal protective equipment  
FRI-20.3  Discuss diseases of concern  
FRI-20.4  Describe laws that relate to infection control  
FRI-20.5  Explain the importance of immunizations  
FRI-20.6  Assess the causes, types, symptoms and ways of dealing with stress  
FRI-20.7  Describe scene safety considerations at hazardous materials incidents and rescue operations  
FRI-20.8  Describe actions required when responding to scenes involving violent or dangerous situations  
FRI-20.9  Discuss the circulatory system  
FRI-20.10 List the links in the chain of survival  
FRI-20.11 Explain actions to be taken before resuscitation  
FRI-20.12 Discuss rescue breathing  
FRI-20.13 Describe the steps of cardiopulmonary resuscitation (CPR)  
FRI-20.14 Describe CPR techniques for individuals ranging from infant to adult
FRI-20.15 Discuss indications of effective CPR and when CPR may be interrupted
FRI-20.16 Summarize when not to begin or to terminate CPR
FRI-20.17 Summarize actions taken when clearing an airway obstruction
FRI-20.18 Describe the main components of the circulatory system
FRI-20.19 Differentiate between arterial, venous, and capillary bleeding
FRI-20.20 Describe the steps for controlling external bleeding
FRI-20.21 Discuss internal bleeding
FRI-20.22 Describe types and signs of shock
FRI-20.23 Describe the steps for managing shock

Domain: Hazardous Materials
Core Standard 21 Students analyze hazardous materials to identify them and prescribe appropriate actions at a fire scene.

Standards

FRI-21.1 Summarize Awareness-Level and Operations-Level responsibilities at hazardous materials incidents
FRI-21.2 Describe types of respiratory protection
FRI-21.3 Summarize respiratory equipment limitations
FRI-21.4 Describe types of protective clothing
FRI-21.5 Discuss U.S. EPA levels of protective equipment
FRI-21.6 Describe NFPA 1994 PPE ensemble classifications
FRI-21.7 Describe the U.S. military mission-oriented protective posture (MOPP) ensembles
FRI-21.8 Discuss PPE selection factors
FRI-21.9 Discuss health and safety issues when wearing PPE
FRI-21.10 Explain proper procedures for inspection, testing, and maintenance of protective clothing and equipment
FRI-21.11 Describe health and physical hazards that may be present at haz mat incidents
FRI-21.12 Describe physical properties of hazardous materials
FRI-21.13 Explain how the General Hazardous Materials Behavior Model (GEBMO) can help firefighters understand the likely course of an incident
FRI-21.14 Explain locations or occupancies clues to the presence of hazardous materials
FRI-21.15 Explain container shapes clues to the presence of hazardous materials
FRI-21.16 Explain transportation placards, labels, and markings clues to the presence of hazardous materials
FRI-21.17 Explain other markings and colors (non-transportation) clues to the presence of hazardous materials
FRI-21.18 Explain how written resources can be used to assist firefighters in identifying hazardous materials
FRI-21.19 Explain how the senses can provide clues to the presence of hazardous materials
FRI-21.20 Explain how monitoring and detection devices can provide clues to the presence of
hazardous materials

FRI-21.21 Summarize indicators of terrorist attacks
FRI-21.22 Discuss identifying illicit laboratories
FRI-21.23 Discuss secondary attacks
FRI-21.24 Obtain information about a hazardous material using the Emergency Response Guide (ERG)

Core Standard 22—Hazardous Materials Operations - Students apply concepts of hazardous material identification and removal to safely perform operations in chemically toxic environments.

Standards
FRI-22.1 Summarize incident priorities for all haz mat and terrorist incidents
FRI-22.2 Discuss the management structure at haz mat or terrorist incidents
FRI-22.3 Describe the problem-solving stages at haz mat and terrorist incidents
FRI-22.4 Identify various strategic goals and explain how they’re achieved
FRI-22.5 Summarize general guidelines for decontamination operations
FRI-22.6 Describe the three types of decontamination
FRI-22.7 Discuss implementing decontamination procedures
FRI-22.8 Discuss rescue at haz mat incidents
FRI-22.9 Explain how the strategic goal of spill control and confinement is achieved
FRI-22.10 Discuss crime scene management and evidence preservation
FRI-22.11 Explain actions taken during the recovery and termination phase of a haz mat or terrorist incident
FRI-22.12 Perform emergency decontamination
FRI-22.13 Perform various specified defensive control functions