

### Course Outline

**COURSE:** JFT 225                      **DIVISION:** 50                      **ALSO LISTED AS:** JFT 8

**TERM EFFECTIVE:** Fall 2020                      **CURRICULUM APPROVAL DATE:** 04/14/2020

**SHORT TITLE:** FIRE FIGHTER I ACAD

**LONG TITLE:** Fire Fighter I Academy

<u>Units</u>	<u>Number of Weeks</u>	<u>Type</u>	<u>Contact Hours/Week</u>	<u>Total Contact Hours</u>
18	18	Lecture:	10.2	183.6
		Lab:	24.92	448.56
		Other:	0	0
		Total:	35.12	632.16

**COURSE DESCRIPTION:**

This academy includes instruction on basic firefighting skills, laws and regulations affecting the fire service. The course will provide the student with knowledge and skills to safely perform, under minimal supervision, essential and advanced fire ground tasks, basic rescue, basic fire prevention and fire investigation task and to use, inspect, and maintain firefighting and rescue equipment. This course also includes mandated field trips to cover all the material. Previously listed as JFT 8.

**PREREQUISITES:**

**COREQUISITES:**

**CREDIT STATUS:** D - Credit - Degree Applicable

**GRADING MODES**

L - Standard Letter Grade

**REPEATABILITY:** N - Course may not be repeated

**SCHEDULE TYPES:**

- 02 - Lecture and/or discussion
- 03 - Lecture/Laboratory
- 04 - Laboratory/Studio/Activity

## **STUDENT LEARNING OUTCOMES:**

By the end of this course, a student should:

1. Explain the theory and fundamentals of heat transfer, fundamentals of combustion, elements of fire and describe how the removal of any one of the elements will result in the extinguishment of the fire.
2. Coordinate the type of personal protective equipment needed for different exposures and locate the equipment on the engine.
3. Compare the different types and applications of portable fire extinguishers for successful extinguishment of small fires.
4. Identify the fire attack methods to combat fires as safely and efficiently as possible and a systematic approach to the fire fighting operations to eliminate confusion and inconsistency on the fire ground.
5. Operate and practice with the components, accessories and functions of self-contained breathing apparatus.
6. Identify the steps a fire fighter needs to take as a first responder to remove or mitigate safety hazards that may further threaten victims, bystanders, and public safety personnel while observing information to provide to the investigators that is pertinent to the investigation.
7. Demonstrate the techniques for inspecting, coupling and uncoupling hoseline during loading operations

## **CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS**

Curriculum Approval Date: 04/14/2020

Lecture Content:

Curriculum Approval Date: 04/14/2020

1. The Orientation and History of the Fire Service
  - a. Intro
    - i. Training to Become a Fire Fighter
    - ii. Fire Suppression
  - b. Fire Fighter Guidelines
    - i. Safety
    - ii. Follow Orders
  - iii. Teamwork
  - iv. Golden Rule
  - c. Firefighter Qualifications
    - i. Age, Education, Medical, Physical Fitness, and Emergency Medical Care Requirements
  - d. Roles and Responsibilities of Fire Fighter
    - i. Fire Fighter I
    - ii. Fire Fighter II
  - e. Roles within the Fire Department
    - i. General Roles
    - ii. Specialized Response Roles
  - f. Working with Other Organizations
    - i. Incident Command System
    - ii. Agencies called upon for Large-Scale Incidents
  - g. Fire Department Governance

- i. Governance
- h. The Organization of the Fire Service
  - i. Company Types
  - ii. Other Views of Fire Service Organization
  - iii. Chain of Command
  - iv. Source of Authority
  - v. Basic Principles of Organization
- i. The History of the Fire Service
  - i. History of Fire Science
  - ii. The American Fire Service
  - iii. Building Codes
  - iv. Training and Education
  - v. Fire Equipment
  - vi. Communications
  - vii. Paying for Fire Service
  - j. Fire Service in the United States
    - i. Intro to Fire Service
- 2. Fire Fighter Safety
  - a. Causes of Fire Fighter Deaths and Injuries
    - i. Heart Attack and Stroke
    - ii. Vehicle Collisions
    - iii. Injuries
  - b. Injury Prevention
    - i. Standards and Procedures
    - ii. Personnel
    - iii. Training
    - iv. Equipment
    - v. Reducing Fire Fighter Injuries and Deaths
  - c. Safety and Health
    - i. Intro to Safety and Health
    - ii. EAPs (Employee Assistance Program)
  - d. Safety During Training
    - i. Training
  - e. Safety During Emergency Response
    - i. Emergency Response
    - f. Safe Driving Practices
      - i. Laws and Regulations Governing Emergency Vehicle Operation
      - ii. SOPs for Personal Vehicles
      - iii. Safe Driving Begins with You
      - iv. Vehicle Collision Prevention
      - v. The Importance of Vehicle Maintenance
  - g. Safety at Emergency Incidents
    - i. Teamwork
    - ii. Accountability
    - iii. Incident Scene Hazards
    - iv. Using Tools and Equipment Safely
    - v. Electrical Safety
    - vi. Lifting and Moving

- vii. Adverse Weather Conditions
- viii. Rehabilitation
- ix. Violence at the Scene
- x. Mental Well-Being
- h. Safety at the Fire Station
  - i. The Fire Station
  - i. Safety Outside Your Workplace
    - i. Outside Your Workplace
- 4. Fire Service Communications
  - a. The Communications Center
    - i. Telecommunications
    - ii. Communications Facility Requirements
    - iii. Communications Center Equipment
    - iv. Computer-Aided Dispatch (CAD)
    - v. Voice Recorders and Activity Logs
    - vi. Call Response and Dispatch
  - b. Communications Center Operations
    - i. Receiving and Dispatching Emergency Calls
      - ii. Call Receipt
      - iii. Location Validation
      - iv. Call Classification and Prioritization
      - v. Unit Selection
      - vi. Dispatch
      - vii. Operational Support and Coordination
      - viii. Status Tracking and Deployment Management
    - ix. Touring the Communications Center
  - c. Radio Systems
    - i. Radio Equipment
    - ii. Radio Operation
    - iii. Using a Radio
    - d. Taking Calls: Emergency, Non emergency, and Personal Calls
      - i. Using Telephone and Intercom System
      - ii. Personal Calls
      - iii. Department Greeting
      - iv. Prompt, Polite, Professional, and Concise
      - v. Skill Drill
- 5. Incident Command System (ICS)
  - a. History of the ICS
  - b. Characteristics of the ICS
    - i. Jurisdictional Authority
    - ii. All-Risk and All-Hazard System
    - iii. Everyday Applicability
    - iv. Unity of Command
    - v. Span of Control
    - vi. Modular Organization
    - vii. Common Terminology
    - viii. Integrated Communications
    - ix. Consolidated IAPs

- x. Designated Incident Facilities
- xi. Resource Management
- c. The ICS Organization
  - i. Command
  - ii. General Staff Functions
- d. Standard ICS Concepts and Terminology
  - i. Single Resources and Crews
  - ii. Divisions and Groups
  - iii. Branches
  - iv. Location Designators
  - v. Task Forces and Strike Teams
- e. Implementing the ICS
  - i. ICS Role
  - ii. Standard Position Titles
- f. Working Within the ICS
  - i. What ICS is and How it Works
  - ii. Responsibilities of First-Arriving Fire Fighters
  - iii. Confirming the Command
  - iv. Transfer of Command
- 6. Fire Behavior
  - a. The Chemistry of Fire
    - i. Fire
    - ii. States of Matter
    - iii. Fuels
    - iv. Types of Energy
    - v. Conservation of Energy
    - vi. Conditions Needed for Fire
    - vii. Chemistry of Combustion
    - viii. Products of Combustion
    - ix. Fire Spread
    - x. Methods of Extinguishment
  - b. The Classes of Fire
    - i. Five Classes of Fire
  - c. Characteristics of Solid-Fuel Fires
    - i. Solid Fuels
    - ii. Solid-Fuel Fire Development
    - iii. Characteristics of a Room-and-Contents Fire
    - iv. Special Considerations
    - d. Fire Behavior in Modern Structures
      - i. Two Major Changes in Modern Structures
      - ii. Fire in Modern Structure Progresses to the Fully Developed Phase Quickly
  - e. Wind Effect
    - i. Wind Influences Behavior of Fire
    - ii. Potential Wind
  - f. Characteristics of Liquid Fuel Fires
    - i. Characteristics
  - g. Characteristics of Gas Fuel Fires
    - i. Vapor Density

- ii. Flammability Limits
- iii. BLEVE
- h. Smoke Reading
- i. Smoke Reading
- ii. Determining Key Attributes to Smoke
- iii. Determining what is Influencing Key Attributes
- iv. Rate of Change
- v. Predict the event
- vi. Smoke Reading through a Door
- 7. Building Construction
  - a. Occupancy
    - i. How Building is Being Used
    - b. Contents
    - c. Types of Construction Materials
      - i. Materials Used
        - ii. Masonry
          - iii. Concrete
          - iv. Steel
          - v. Other Metals
          - vi. Glass
          - vii. Gypsum Board
          - viii. Wood
          - ix. Plastics
        - d. Types of Construction
          - i. Five Types of Building Construction
            - ii. Fire Resistive
            - iii. Noncombustible
            - iv. Ordinary
            - v. Heavy Timber
            - vi. Wood Frame
          - e. Building Components
            - i. Foundations
            - ii. Floors and Ceilings
            - iii. Roofs
            - iv. Trusses
            - v. Walls
            - vi. Doors and Windows
            - vii. Interior Finishes and Floor Coverings
            - viii. Manufactured Housing
            - ix. Buildings under Construction or Demolition
          - f. Pre-incident Planning and Incident Size-Up
            - i. Information Needed
- 15. Ventilation
  - a. Definition and Components
  - b. Fire Behavior and Ventilation
    - i. Ventilation combined with fire attack and water saves lives and reduces property damage
    - ii. Products of Combustion
    - iii. Convection

- iv. Spread of Products of Combustion
- v. Mushrooming
- vi. Products of Combustion Trapped in a Structure
- c. Benefits of Proper Ventilation
- d. Backdraft and Flashover Conditions
  - i. Backdraft
  - ii. Flashover
- e. Factors Affecting Ventilation
  - i. Fire fighters must consider how fire behavior dictates the movement of the products of combustion
  - ii. Creating Openings
  - iii. Convection
  - iv. Mechanical Ventilation
  - v. Wind and Atmospheric Forces
  - f. Building Construction Considerations
    - i. Effects on Ventilation
    - ii. Fire-Resistive Construction
    - iii. Ordinary Construction
    - iv. Wood-frame Construction
  - g. Tactical Priorities
    - i. Three Tactical Priorities
    - ii. Life Safety-First Priority
    - iii. Contain Fire and Gain Control- Second Priority
    - iv. Property Conservation- Third Priority
  - h. Locations and Extent of Smoke and Fire Considerations
    - i. When ventilation is needed and where it should be provided
    - i. Types of Ventilation
      - i. Two Basic Types of Ventilation Openings
      - ii. Contaminated Atmosphere
      - iii. Clean Air
      - iv. Horizontal Ventilation
      - v. Mechanical Ventilation
      - vi. Vertical Ventilation
  - j. Basic Indicators of Roof Collapse
  - k. Roof Construction
    - i. Roof Support Structures
    - ii. Roof Coverings
    - iii. Effects of Roof Construction on Fire Resistance
    - iv. Solid-Beam vs. Truss Construction
    - v. Roof Designs
      - I. Vertical Ventilation Techniques
        - i. Types of Openings that Provide Vertical Ventilation
        - ii. Objective of Roof Ventilation Operations
        - iii. Tools Used in Vertical Ventilation
        - iv. Power saws will effectively cut through most roof coverings
        - v. Types of Roof Cuts
  - m. Special Considerations
    - i. Obstacles
    - ii. Ventilating Concrete Roofs

- iii. Ventilating Metal Roofs
- iv. Ventilating Basements
- v. Ventilating High-rise Buildings
- vi. Ventilating Windowless Buildings
- vii. Ventilating Large Buildings
- n. Equipment Maintenance
- 28. Hazardous Materials Overview
  - a. What Is a Hazardous Material?
    - i. Introduction to hazardous material
    - b. Levels of Training: Regulations and Standards
      - i. Regulations
      - ii. Standards
    - iii. Levels of Training
  - c. Other Hazardous Materials Laws, Regulations, and Regulatory Agencies
    - i. Government agencies
    - ii. Laws
    - iii. Local Emergency Planning Committees (LEPCs)
    - iv. State Emergency Response Commission
  - d. Difference Between Hazardous Materials Incidents and Other Types of Emergencies
    - i. Overview
    - e. Planning a Response
      - i. Overview
- 29. HazMat Properties and Effects
  - a. Characteristics of Hazardous Materials
    - i. Physical and chemical changes
    - ii. Boiling point
    - iii. Flash point, fire point, ignition (autoignition) temperature, and flammable range
    - iv. Vapor Density
    - v. Vapor pressure
    - vi. Specific gravity
    - vii. Water miscibility
    - viii. Corrosivity (pH)
    - ix. Toxic products of combustion
    - x. Radiation
  - b. Hazard Exposure and Contamination
    - i. Hazard and exposure
    - ii. Contamination
    - iii. Secondary contamination
  - c. Types of Hazardous Materials: Weapons of Mass Destruction
    - i. Introduction to weapons of mass destruction (WMDs)
    - ii. Nerve Agents
    - iii. Blister agents
    - iv. Cyanide
    - v. Choking agents
    - vi. Irritants (Riot Control Agents)
    - vii. Convulsants
  - d. Harmful Substances' Routes of Entry Into the Human Body
    - i. Introduction to routes of entry



- ii. Inhalation
- iii. Absorption
- iv. Ingestion
- v. Injection
- e. Chronic Versus Acute Health Effects
  - i. Chronic health hazard
  - ii. Acute health effect
- f. Using the Emergency Response Guidebook
  - i. Divided into four major sections
- 30. Hazardous Materials: Recognizing and Identifying the Hazards
  - a. Recognizing a Hazardous Materials Incident
    - i. Introduction to recognizing a hazardous materials incident
    - ii. Occupancy and location
  - b. Containers
    - i. Definition
    - ii. Container Type
    - iii. Container volume
    - iv. Nonbulk storage vessels
  - c. Transporting Hazardous Materials
    - i. Introduction to transporting hazardous materials
    - ii. Railroad transportation
    - iii. Pipelines
  - d. Facility and Transportation Markings and Colorings
    - i. DOT system
    - ii. Labels and placards
    - iii. NFPA 704 marking system
    - iv. Military hazardous material/WMD markings
  - e. Other Reference Sources
    - i. MSDS
    - ii. CHEMTREC
    - iii. NCR
  - f. Radiation
    - i. Recognition
    - ii. Radiation Safety Officer
    - iii. Type-A Packaging
    - iv. Type-B Packaging
  - g. Potential Terrorist Incident
    - i. Chemical vs. Biological Incident
    - ii. Chemical Agents
    - iii. Biological agents
    - iv. Radiological agents
    - v. Illicit laboratories
    - vi. Explosives
    - vii. Indicators of Secondary Devices
- 36. Fire Prevention and Public Education
  - a. Fire Prevention
    - i. Enactment of fire codes
    - ii. Inspection and code enforcement

- iii. Public fire and life-safety education
- iv. Stop, Drop, and Roll
- v. EDITH
- vi. Smoke alarms
- vii. Residential Fire Sprinkler Systems
- viii. Selection and Use of Portable Fire Extinguishers
- b. Fire Cause Determination
- c. Conducting a Fire Safety Survey in a Private Dwelling
  - i. conducting a fire safety survey
  - ii. Getting started
- iii. Outside hazards
- iv. Inside Hazards
- d. Conducting Fire Station Tours
- 37. Behavioral Health and Cancer Awareness
  - a. Recognition of Behavioral Health Stressors
    - i. Post-Crisis Management and Coping Mechanisms
    - ii. Recognizing and Addressing High-Risk Behaviors
    - iii. Building Personal Resiliency
    - iv. Building and Utilizing Peer Networks
    - v. Family Support
  - b. Cancer Awareness
    - i. Occupational Cancer Awareness
    - ii. The Role of PPE and Decontamination
    - iii. Primary Prevention Measures

#### Lab Content

- 3. Personal Protective Equipment and Self Contained Breathing Apparatus (SCBA)
  - a. Personal Protective Equipment (PPE)
    - i. PPE
    - ii. Structural Fire Fighting Ensemble
    - iii. Donning Personal Protective Clothing
    - iv. Doffing Personal Protective Clothing
    - v. Care of Personal Protective Clothing
    - vi. Specialized Protective Clothing
  - b. Respiratory Protection
    - i. Respiratory Hazards of Fire
    - ii. Other Toxic Environments
    - iii. Conditions that Require Respiratory Protection
    - iv. Types of Breathing Apparatus
    - v. SCBA Standards and Regulations
    - vi. Uses and Limitations of SCBA

- vii. Components of SCBA
- viii. Pathway of Air Through a SCBA
- ix. Skip Breathing Technique
- x. Mounting Breathing Apparatus
- xi. Donning SCBA
- xii. Safety Precautions for SCBA
- xiii. SCBA Use During Emergency Operations
- xiv. Doffing SCBA
- c. Putting it All Together: Donning the Entire PPE Ensemble
  - i. Putting it All Together
  - ii. SCBA Inspection and Maintenance
- d. Inspection of SCBA
  - i. Operational Testing Checks the Functioning Parts of SCBA
  - ii. Annual Inspection
  - iii. Servicing SCBA Cylinders
  - iv. Replacing SCBA Cylinders
  - v. Cleaning and Sanitizing SCBA
- 8. Portable Fire Extinguishers
  - a. Purposes of Fire Extinguishers
    - i. Purpose and Primary Uses
    - ii. Use of Portable Fire Extinguishers in Incipient Fires
    - iii. Special Extinguishing Agents
  - b. Classes of Fires
    - i. Match Appropriate Type of Extinguisher to Type of Fire
    - ii. Class A Fires
    - iii. Class B Fires
    - iv. Class C Fires
    - v. Class D Fires
    - vi. Class K Fires
  - c. Classification of Fire Extinguishers
    - i. Characteristics and Capabilities
    - ii. Standards, Classification, and Rating System
    - iii. Letters and Numbers Classification System
    - iv. Standard Test Fires to Rate Effectiveness of Fire Extinguishers

- d. Labeling of Fire Extinguishers
  - i. Labeling
  - ii. Traditional Lettering System
  - iii. Pictograph Labeling System
- e. Fire Extinguisher Placement
  - i. Classifying Area Hazards
  - ii. Determining Placement
- f. Methods of Fire Extinguishment
  - i. Cooling the Fuel
  - ii. Cutting off the Supply of Oxygen
  - iii. Interrupting the Chain Reactions
- g. Types of Extinguishing Agents
  - i. Water
  - ii. Dry Chemical
  - iii. Carbon Dioxide
  - iv. Foam
  - v. Wet Chemical
  - vi. Halogenated Agents
  - vii. Dry Powder
- h. Fire Extinguisher Design
  - i. Use of Pressure to Expel Contents
  - ii. Portable Fire Extinguisher Components
  - iii. Wheeled Fire Extinguishers
    - i. Fire Extinguisher Characteristics
  - i. Water Extinguishers
  - ii. Dry Chemical Extinguishers
  - iii. Carbon Dioxide Fire Extinguishers
  - iv. Class B Foam Extinguishers
  - v. Wet Chemical Extinguishers
  - vi. Halogenated-Agent Extinguishers
  - vii. Dry Powder Extinguishing Agents
- j. Use of Fire Extinguishers
  - i. Simple to Operate
  - ii. Locating a Fire Extinguisher

- iii. Selecting Proper Fire Extinguisher
- iv. Transporting a Fire Extinguisher
- v. Basic Steps of Fire Extinguisher Operation
- vi. Ensure your Personal Safety
- k. Care of Fire Extinguishers
  - i. Inspection
  - ii. Maintenance
  - iii. Recharging
  - iv. Hydrostatic Testing
- 9. Fire Fighter Tools and Equipment
  - a. General Considerations
    - i. Hand Tools and Power Tools
    - ii. Safety
    - iii. Conditions of Use/ Operating Conditions
    - iv. Effective Use
  - b. Functions
    - i. Engine or Truck Company
    - ii. Rotating Tools
    - iii. Pushing/ Pulling Tools
    - iv. Prying/Spreading Tools
    - v. Striking Tools
    - vi. Cutting Tools
    - vii. Multiple Function Tools
    - viii. Special-Use Tools
  - c. Phases of Use
    - i. Process of Extinguishing a Fire
    - ii. Basic Steps
    - iii. Response and Size-Up
    - iv. Forcible Entry
    - v. Interior Fire Fighting Tools and Equipment
    - vi. Search and Rescue Tools and Equipment
    - vii. Rapid Intervention Tools and Equipment
    - viii. Ventilation Tools and Equipment
    - ix. Overhaul Tools and Equipment

- d. Tool Staging
- i. Necessary Equipment
- e. Maintenance
  - i. Manufacturer's Instructions
  - ii. Cleaning and Inspecting Hand Tools
  - iii. Cleaning and Inspecting Power Equipment and Tools
  - iv. Steps for Cleaning and Inspecting Power Tools
- 10. Ropes and Knots
  - a. Types of Rope
    - i. Three primary types of rope
    - ii. Life Safety Rope
    - iii. Escape Rope
    - iv. Utility Rope
  - b. Rope Materials
    - i. Natural Fibers
    - ii. Synthetic Fibers
  - c. Rope Construction
    - i. The best choice of rope construction depends on the specific application
    - ii. Twisted Rope
    - iii. Braided Rope
    - iv. Kernmantle Rope
    - v. Dynamic and Static Rope
    - vi. Dynamic and Static Kernmantle Ropes
  - d. Technical Rescue Hardware
    - i. Carabiner or a Snap Link
    - ii. Harness
    - iii. Rope Rescue
    - iv. Rope Rescue Incidents
    - v. Trench Rescue
    - vi. Confined Space Rescue
    - vii. Water Rescue
  - e. Rope Maintenance
    - i. Four Parts to Maintenance Formula
    - ii. Care for the Rope

- iii. Clean the Rope
- iv. Inspect the Rope
- v. Store the Rope
- f. Knots
  - i. Types of Knots
  - ii. Tying Knots
  - iii. Using knots
  - iv. Terminology
  - v. Safety Knot
  - vi. Hitches
  - vii. Loop Knots
  - viii. Bends
- g. Hoisting
  - i. Hoisting an Axe
  - ii. Hoisting a Pike Pole
  - iii. Hoisting a Ladder
  - iv. Hoisting a Dry Hose Line
  - v. Hoisting Other Tools and Equipment
- 11. Response and Size-Up
  - a. Response
    - i. Response Preparation
    - ii. Alarm Receipt
    - iii. Riding the Apparatus
    - iv. Emergency Response
    - v. Prohibited Practices
    - vi. Dismounting a Stopped Apparatus
    - vii. Traffic Safety on the Scene
  - b. Arrival at the Incident Scene
    - i. After arriving, SOPs and the incident management system must guide all actions
    - ii. Personnel Accountability System
    - iii. Controlling Utilities
  - c. Size-Up
    - i. Definition
    - ii. Managing Information

- iii. Resources
- d. Incident Action Plan
- i. Five Basic Fire-Ground Priorities
  - ii. Rescue
  - iii. Exposure Protection
  - iv. Confinement
  - v. Extinguishment
  - vi. Salvage and Overhaul
- 12. Forcible Entry
  - a. Forcible Entry Situations
    - i. Required at emergency incidents where time is a critical factor
    - ii. Point of Entry and Method to be Used
    - iii. "Try Before You Pry"
  - b. Forcible Entry Tools
    - i. General Tool Safety
    - ii. General Carrying Tips
    - iii. General Maintenance Tips
    - iv. Types of Forcible Entry Tools
  - c. Doors
    - i. Basic Door Construction
    - ii. Construction Material
    - iii. Types of Doors
  - d. Windows
    - i. Windows
    - ii. Safety
    - iii. Glass Construction
    - iv. Frame Designs
  - e. Locks
    - i. Parts of a Door Lock
    - ii. Parts of a Padlock
    - iii. Safety
    - iv. Types of Locks
    - v. Forcing Entry through Security Gates and Windows
  - f. Breaching Walls and Floors



- i. Last Resort
- ii. Load Bearing/Non-Load Bearing Walls
- iii. Exterior Walls
- iv. Interior Walls
- v. Floors
- vi. Vehicle Entry
- g. Systematic Forcible Entry
- i. Issues that Need to be Evaluated Before Taking Action
- h. Forcible Entry and Salvage
- i. Before Entry
- ii. After Entry
- 13. Ladders
- a. Functions of a Ladder
- i. Primary Functions
- ii. Secondary Functions
- b. Ladder Construction
- i. Basic Ladder Components
- ii. Beams
- iii. Rail
- iv. Truss Block
- v. Rung
- vi. Tie Rod
- vii. Tip
- viii. Butt
- ix. Butt Spurs
- x. Butt Plate
- xi. Roof Hooks
- xii. Heat Sensor Label
- xiii. Protection Plates
- xiv. Extension Ladder Components
- c. Types of Ladders
- i. Aerial Apparatus
- ii. Portable Ladders
- d. Inspection, Maintenance, and Service Testing of Portable Ladders

- i. Inspection
- ii. Maintenance
- iii. Cleaning
- iv. Service Testing
- e. Ladder Safety
  - i. Hazards
  - ii. Standards Procedure and Manufacturer's Recommendations
  - iii. General Safety Requirements
  - iv. Lifting and Moving Ladders
  - v. Placement of Ground Ladders
  - vi. Working on a Ladder
  - vii. Rescue Operations
  - viii. Ladder Damage
- f. Using Portable Ladders
  - i. Ladder Selection
  - ii. Removing Ladders from Apparatus
  - iii. Lifting Ladders
  - iv. Carrying Ladders
  - v. Placing Ladders
  - vi. Raising Ladders
  - vii. Securing Ladders
  - viii. Climbing Ladders
  - ix. Dismounting Ladders
  - x. Working from Ladders
  - xi. Placing Roof Ladders
- g. Inspect a Chimney
  - i. General Safety Rules for Practicing Skills
- 14. Search and Rescue
  - a. Search and Rescue Operations
    - i. Coordinating Search and Rescue Operations with Fire Suppression
    - ii. Search and Rescue Size-Up
    - iii. Search Coordination
    - iv. Search Priorities
  - b. Primary Search

- i. Types of Searches
- ii. Primary Search
- c. Search Techniques
  - i. Standard Search Techniques
  - ii. Radio
  - iii. Search Patterns
  - iv. Thermal Imaging Devices
  - v. Search Ropes
  - vi. Officer-Led Search
  - vii. Vent-Entry-Search
  - viii. Conducting a Primary Search
  - ix. Secondary Search
- d. Search Safety
  - i. Risk Management
  - ii. Search and Rescue Equipment
  - iii. Methods to Determine Whether an Area is Tenable
- e. Rescue Techniques
  - i. Shelter-in-Place
  - ii. Exit Assist
  - iii. Simple Victim Carries
  - iv. Emergency Drags
  - v. Assisting a Person Down a Ground Ladder
  - vi. Removal of Victims by Ladders
- 16. Water Supply
  - a. Rural Water Supplies
    - i. Wells or Cisterns
    - ii. No Fire Hydrants
    - iii. Static Sources of Water
    - iv. Mobile Water Supply Apparatus
    - v. Portable Tanks
    - vi. Tanker Shuttles
  - b. Municipal Water Systems
    - i. Systems
    - ii. Water Sources

- iii. Water Treatment Facilities
- iv. Water Distribution System
- c. Types of Fire Hydrants
  - i. Wet-Barrel Hydrants
  - ii. Dry-Barrel Hydrants
- d. Fire Hydrant Locations
  - i. Located according to local standards and nationally recommended practices
  - ii. Placed a certain distance apart
- iii. Requirements
- e. Fire Hydrant Operation
  - i. Department Procedure
  - ii. Standard Operating Procedure (SPOs)
  - iii. Shutting Down a Hydrant
- f. Maintaining Fire Hydrants
  - i. Inspecting Fire Hydrants
  - ii. Testing Fire Hydrants
- g. Fire Hydraulics
  - i. Fire Hydraulics
  - ii. Flow
  - iii. Pressure
  - iv. Friction
  - v. Elevation
  - vi. Water Hammer
- h. Fire Hoses
  - i. Supply Hoses or Attack Hoses
  - ii. Sizes
  - iii. Hose Construction
  - iv. Hose Couplings
  - v. Attack Hose
  - vi. Supply Hose Use
    - i. Hose Care, Maintenance, and Inspection
    - i. Factors that Cause Damage
    - ii. Mechanical Damage
    - iii. Heat and Cold

- iv. Chemicals
- v. Mildew
- vi. Cleaning Hoses
- vii. Hose Inspection
- j. Hose Appliances
  - i. Wye
  - ii. Water Thief
  - iii. Siamese Connection
  - iv. Adapters
  - v. Reducer
  - vi. Hose Jacket
  - vii. Hose Roller
  - viii. Hose Clamp
  - ix. Valves
  - k. Hose Rolls
    - i. Transportation
    - ii. Ways to Roll Hose
  - l. Fire Hose Evolutions
    - i. Supply Line Operations
      - ii. Loading Supply Hose
        - iii. Connecting a fire department engine to a water supply
        - iv. Supply Hose Carries and Advances
        - v. Connecting Supply Hose Lines to Standpipe and Sprinkler Systems
        - vi. Replacing a Defective Section of Hose
        - vii. Draining and Picking Up Hose
        - viii. Unloading Hose
- 17. Fire Attack and Foam
  - a. Attack Hose
    - i. Intro to Attack Hoses
    - ii. Sizes of Attack Lines
  - b. Attack Line Evolutions
    - i. Definition
    - ii. Pre-connected Attack Lines
    - iii. Wyed lines

- iv. Advancing Attack Lines
- v. Extending an Attack Line
- vi. Advancing an Attack Line from a Standpipe Outlet
- vii. Replacing a Defective Section of Hose
- c. Nozzles
  - i. Purpose
  - ii. Classifications
  - iii. Nozzle Shut-offs
  - iv. Smooth-bore nozzles
  - v. Fog-Stream Nozzles
  - vi. Other Types of Nozzles
  - vii. Nozzle Maintenance and Inspection
- d. Foam
  - i. Intro to Foam
  - ii. Foam Classifications
  - iii. Foam Concentrates
  - iv. Foam Equipment
  - v. Foam Application
  - vi. Foam Application Techniques
  - vii. Back-up Resources
  - viii. Foam Apparatus
- 18. Fire Fighter Survival
  - a. Risk–Benefit Analysis
    - i. Introduction to Risk-Benefit Analysis
  - b. Hazard Indicators
    - i. Introduction to Hazard Indicators
  - c. Safe Operating Procedures
    - i. Rules of Engagement for Fire Fighter Survival
    - ii. Team Integrity
    - iii. Personnel Accountability System
    - iv. Emergency Communications Procedures
    - v. Initiating a Mayday
    - vi. Rapid Intervention Company/Crew
  - d. Fire Fighter Survival Procedures

- i. Safety
- ii. Maintaining Orientation
- e. Self-Rescue
  - i. Techniques
- f. Safe Locations
- g. Air Management
- h. Rescuing a Downed Fire Fighter
- i. Rescue Techniques and Considerations
- i. Rehabilitation
  - i. Purpose
  - ii. Personnel Accountability System
- j. Counseling and Critical Incident Stress
  - i. Fire fighters are often exposed to very stressful situations
  - ii. Normal Coping Mechanisms
  - iii. Negative Reactions to Critical Incidents
  - iv. Reactions
  - v. Counseling and Critical Incident Stress Management (CISM)
- 19. Salvage and Overhaul
  - a. Lighting
    - i. Lighting
    - ii. Safety Principles and Practices
    - iii. Lighting Equipment
    - iv. Battery-Powered Lights
    - v. Electrical Generators
    - vi. Lighting Methods
    - vii. Cleaning and Maintenance
  - b. Salvage Overview
    - i. Salvage
    - ii. Safety
    - iii. Salvage Tools
  - c. Using Salvage Techniques to Prevent Water Damage
    - i. Best way to prevent water damage is to limit water application
    - ii. Deactivating Sprinklers
    - iii. Removing Water

- d. Using Salvage Techniques to Limit Smoke and Heat Damage
  - i. Limiting smoke and heat damage
  - ii. Salvage Covers
  - iii. Salvage Cover Maintenance
  - iv. Floor Runners
  - v. Other Salvage Operations
- e. Overhaul Overview
  - i. Overhaul
  - ii. Safety Considerations During Overhaul
  - iii. Coordinating Overhaul with Fire Investigators
  - iv. Where to Overhaul
- f. Overhaul Techniques
  - i. Overhaul Techniques
  - ii. Overhaul Tools
  - iii. Opening walls and ceilings
- 20. Fire Fighter Rehabilitation
  - a. Emergency Incident Rehabilitation
  - b. Factors, Cause, and Need for Rehabilitation
    - i. Stresses of firefighting
    - ii. Personal protective equipment (PPE)
    - iii. Dehydration
    - iv. Energy consumption
    - v. Tolerance for stress
    - vi. Rehabilitation allows the fire fighter to rest and recover from fatigue and stress
  - c. Types of Incidents Affecting Fire Fighter Rehabilitation
    - i. Rehabilitation should be addressed at all incidents
    - ii. Extended fire incidents
    - iii. Other types of incidents requiring rehabilitation
  - d. How Does Rehabilitation Work
    - i. Model of rehabilitation consists of seven parts
    - ii. Relief from climatic conditions
    - iii. Rest and recovery
    - iv. Active or Passive Cooling and Warming
    - v. Rehydration and calorie replacement



- vi. Medical monitoring
- vii. Member accountability
- viii. Release and reassignment
- e. Personal Responsibility in Rehabilitation
  - i. Safety
  - ii. Personal Limits
  - iii. Participation in Rehabilitation
- 21. Wildland and Ground Fires
  - a. Wildland and Ground Fires and the Fire Triangle
    - i. Fire Triangle: Fuel, Oxygen, and Heat
    - ii. Fuel
    - iii. Other fuel characteristics
    - iv. Oxygen
    - v. Heat
  - b. Other Factors that Affect Wildland Fires
    - i. Weather
    - ii. Topography
  - c. Extinguishing Wildland Fires
    - i. Anatomy of a wildland fire
    - ii. Methods of extinguishment
    - iii. Types of attack
  - d. Priorities of Attack
    - i. Incident Commander
    - ii. Fire Apparatus Used for Wildland Fires
    - iii. Safety in wildland firefighting
  - iv. PPE
  - v. Fire Shelters
  - e. The Challenge of the Wildland–Urban Interface
    - i. Problem of Mixing of Wildlands and Developed Areas
    - ii. Wildland-Urban Interface
    - iii. Efforts geared at reducing loss from wildland fires needs to be directed at prevention
  - f. Wildland Fire Safety
    - i. Ten standard Fire Fighting Orders
- 22. Fire Suppression

- a. Offensive versus Defensive Operations
  - i. Introduction to offensive versus defensive operations
  - ii. Command Considerations
- b. Operating Hose Lines
  - i. Introduction to operating hose lines
  - ii. Fire streams
  - iii. Interior fire attack
  - iv. Large handlines
  - v. Master stream devices
- c. Protecting Exposures
  - i. Preventing fire spread
- d. Ventilation
- e. Specific Fire-Ground Operations
  - i. Concealed-space fires
  - ii. Basement fires
  - iii. Fires above ground level
  - iv. Fires in large buildings
  - v. Fires in buildings during construction, renovation, or demolition
  - vi. Fires in lumberyards
  - vii. Fires in stacked or piled materials
  - viii. Trash container and rubbish fires
  - ix. Confined spaces
- f. Vehicle Fires
  - i. Attacking vehicle fires
  - ii. Alternative-fuel vehicles
  - iii. Fire in the passenger area
  - iv. Fire in the engine compartment
  - v. Overhauling vehicle fires
- g. Flammable-Liquid Fires
  - i. Introduction to Flammable-Liquid Fires
  - ii. Hazards
  - iii. Suppression
- 23. Pre-incident Planning
  - a. Pre-incident Plan

- i. Overview
- ii. Target Hazards
- iii. Developing a Pre-incident Plan
- b. Conducting a Pre-incident Survey
  - i. Introduction to conducting a pre-incident survey
  - ii. Pre-incident planning for response and access
  - iii. Pre-incident planning for scene size-up
- c. Tactical Information
  - i. Considerations for water supply
  - ii. Utilities
  - iii. Pre-incident Planning for Search and Rescue
  - iv. Pre-incident Planning for Forcible Entry
  - v. Pre-incident Planning for Ladder Placement
  - vi. Pre-incident Planning for Ventilation
- d. Occupancy Considerations
  - i. High-rise buildings
  - ii. Assembly occupancies
  - iii. Healthcare facilities
  - iv. Detention and correctional facilities
  - v. Residential occupancies
- e. Locations Requiring Special Considerations
  - i. Introduction to locations requiring special considerations
  - ii. Special hazards
- 24. Fire and Emergency Medical Care
  - a. Overview
  - b. The Importance of EMS to the Fire Service and the Community
    - i. Introduction to the importance of EMS to the fire service and the community
  - c. Levels of Service
    - i. BLS (Basic Life Saving)
    - ii. ALS (Advanced Life Saving)
  - d. Training
    - i. BLS training
    - ii. ALS
    - iii. Training Agencies

- iv. Continuing medical education (CME)
- e. EMS Delivery Systems
  - i. Introduction to EMS delivery systems
  - ii. Types of systems
  - iii. Operational considerations
- f. Interactions
  - i. Patients
  - ii. Medical Director
  - iii. Hospital Personnel
- g. Confidentiality
  - i. EMS providers are subject to the provisions of the HIPAA
  - ii. Protecting the privacy of the people you serve is an ethical responsibility
- 25. Emergency Medical Care
  - a. Infectious Diseases and Standard Precautions
    - i. Introduction to infection control
    - ii. Bloodborne pathogens
    - iii. Airborne pathogens
    - iv. Direct Contact
    - v. Standard precautions
    - vi. Immunizations
  - b. Airway Management
    - i. Airway care and rescue breathing
    - ii. Anatomy and function of the respiratory system
    - iii. "A" is for airway
    - iv. Correct the blocked airway
    - v. Check for fluids, foreign bodies, or dentures
    - vi. Correct the airway using finger sweeps or suction
    - vii. Suctioning
    - viii. Maintain the airway
    - ix. Recovery position
    - x. Airway Adjuncts
    - xi. "B" is for breathing
    - xii. Check breathing
    - xiii. Correct the breathing

- xiv. Performing rescue breathing on children and infants
- xv. Foreign-body airway obstruction
- xvi. Types of Airway Obstruction
- xvii. Management of foreign-Body Airway Obstructions
- xviii. Oxygen administration
- xix. Special considerations
- c. Anatomy and Function of the Circulatory System
  - i. Anatomy
  - ii. Components of CPR
  - iii. The cardiac chain of survival
  - iv. When to start CPR
  - v. When to stop CPR
  - vi. External cardiac compression
  - vii. Adult CPR
  - viii. Infant CPR
  - ix. One-Rescuer and Two-Rescuer Child CPR
  - x. Signs of Effective CPR
  - xi. Complications of CPR
- d. Creating Sufficient Space for CPR
  - i. Fire fighters may frequently be alone with a victim in cardiac arrest
- e. Early Defibrillation by Fire Fighters
  - i. Heart Disease
- f. Bleeding and Shock
  - i. Standard precautions and soft-tissue injuries
  - ii. Parts and Function of the Circulatory System
  - iii. Shock
- g. Bleeding
  - i. Controlling external blood loss
  - ii. Standard Precautions and bleeding control
- h. Wounds
  - i. Closed Wounds
  - ii. Open Wounds
  - iii. Principles of wound treatment
  - iv. Dressing and Bandaging Wounds

- i. Burns
- i. Skin is a Barrier
- ii. Burn depth
- iii. Extent of burns
- iv. Cause or type of burns
- j. Injuries to the Spine
  - i. Introduction to injuries to the spine
  - ii. Stabilizing the cervical spine
- k. Triage
  - i. Triage
  - ii. Triage Priorities
- l. Violent Situations
  - i. Introduction to violent situations
  - ii. Behavioral emergencies
- 26. Vehicle Rescue and Extrication
  - a. Types of Vehicles
    - i. Conventional vehicles
    - ii. Alternative-powered vehicles
    - iii. Electric-powered vehicles
    - iv. Hybrid vehicles
  - b. Vehicle Anatomy
    - i. Parts of a Motor Vehicle
    - ii. Motor Vehicle Frames
  - c. Alternative-Powered Vehicles
    - i. Alternative-powered vehicles
    - ii. Blended Liquid Fuel-Powered Vehicles
    - iii. Compressed gas-powered vehicles
    - iv. Hybrid and electric vehicles
    - v. Fuel cell-powered vehicles
  - d. Responding to the Scene
    - i. The first step in the extrication process is response
  - e. Arrival and Size-Up
    - i. Traffic Hazards
    - ii. Fire Hazards

- iii. Electrical Hazards
- iv. Other Hazards
- f. Stabilization of the Scene
  - i. Traffic Hazards
  - ii. Fire Hazards
  - iii. Electrical Hazards
  - iv. Other Hazards
  - v. Cribbing
  - vi. Rescue Lift Air Bags
- g. Principles of Gaining Access and Disentangling the Victim
  - i. Use these techniques to gain access to a trapped victim
- h. Tools Used for Extrication
  - i. Overview
    - i. Gaining Access to the Victim
      - i. Open the Door
      - ii. Break Tempered Glass
      - iii. Force the Door
      - iv. Provide Initial Medical Care
    - j. Disentangling the Victim
      - i. Intro to Disentangling the Victim
      - ii. Displace the Seat
      - iii. Remove the Windshield
      - iv. Remove the Steering Wheel
      - v. Displace the Dashboard
      - vi. Displace the Roof
  - k. Removing and Transporting the Victim
    - i. Stabilization and Packaging of Victim for Removal
    - ii. Plan for Victim Removal
    - iii. Transportation of Patient
- l. Terminating an Incident
  - i. Securing the Scene
- 27. Assisting Special Rescue Teams
  - a. Overview
  - b. Types of Rescues Encountered by Fire Fighters

- i. Variety of special rescue situations
- c. Guidelines for Operations
  - i. Be Safe
  - ii. Follow Orders
  - iii. Work as a Team
  - iv. Golden Rule of Public Service
- d. Steps of Special Rescue
  - i. Preparation
  - ii. Response
  - iii. Arrival and Size-Up
  - iv. Stabilization
  - v. Access
  - vi. Disentanglement
  - vii. Removal
  - viii. Transport
- e. Post Incident Duties
  - i. Security of the Scene and Preparation for the Next Call
  - ii. Post Incident Analysis
- f. General Rescue Scene Procedures
  - i. Safety
    - ii. Approaching the Scene
    - iii. Dealing with Utility Hazards
    - iv. Providing Scene Security
    - v. Using Protective Equipment
    - vi. Using the Incident Command System (ICS)
    - vii. Ensuring Accountability
    - viii. Making Victim Contact
  - g. Assisting Rescue Crews
    - i. Overview
    - ii. Vehicles and machinery
    - iii. Tools Used
    - iv. Confined Space
    - v. Rope Rescue
    - vi. Trench and excavation collapse



- vii. Structural collapse
- viii. Water and ice rescue
- ix. Wilderness SAR
- x. Hazardous materials incidents
- 31. Hazardous Materials: Implementing a Response
  - a. Introduction
    - i. Who to Contact
    - ii. What to report
  - b. Plan an Initial Response
    - i. Safety
    - ii. Initial Call for Help
    - iii. Type of Material Involved
    - iv. Characteristics of the Affected Area
  - c. Response Objectives
    - i. Defensive actions
    - ii. Proper Personal Protective Equipment (PPE)
    - iii. Emergency decontamination procedures
  - d. Gauging the Potential Harm or Severity of the Incident
    - i. Factors to Consider
    - ii. Resources for determining the size of the incident
    - iii. Reporting the Size and Scope of the Incident
    - iv. Concentration of a Released Hazardous Material
  - e. Secondary Attacks
    - i. Recognition
    - ii. Primary Attack May be Used to Draw Responders to Scene
    - iii. Signs of Secondary Devices
  - f. Incident Command System
    - i. Introduction to the ICS
    - ii. The ICP
- 32. Hazardous Materials: Personal Protective Equipment, Scene Safety, and Scene Control
  - a. Overview
  - b. Levels of Damage Caused by Chemicals to Humans
    - i. Damage Depends on the Material's TLV
    - ii. TLV/Short-Term Exposure Limit (TLV-STEL)

- iii. TLV/Time-Weighted Average (TLV-TWA)
- iv. TLV/Ceiling (TLV-C)
- v. TLV/Skin
- vi. Permissible Exposure Limit
- vii. IDLH
- viii. Training and Equipment
- ix. Exposure Guidelines
- x. Three Basic Atmospheres at a Hazardous Materials Emergency
- c. Personal Protective Equipment
  - i. Purpose
  - d. Hazardous Materials—Specific Personal Protective Equipment
    - i. Street clothing and work uniforms
    - ii. Structural firefighting protective clothing
    - iii. High-Temperature-Protective Clothing
    - iv. Chemical-Protective Clothing and Equipment
    - v. Respiratory protection
    - e. Chemical-Protective Clothing Ratings
      - i. Level A
      - ii. Level B
      - iii. Level C
      - iv. Level D
    - f. Skin Contact Hazards
      - i. Principle Dangers
      - ii. Skin Absorption
      - iii. Corrosives
    - g. Safety Precautions
      - i. Excessive heat disorders
      - ii. Cooling techniques
      - iii. Cold-temperature exposures
      - iv. Physical capability requirements
    - h. Response Safety Procedures
      - i. response safety procedures
      - ii. Control zones
      - iii. Isolation techniques

- iv. The buddy system and backup personnel
- 33. Hazardous Materials: Response Priorities and Actions
  - a. Introduction
    - i. Safety
    - ii. Incident Commander
  - b. Exposures
    - i. Protective actions
    - ii. Evacuating the Exposed Area
  - c. Detecting the Hazard
    - i. Steps to Monitor the Atmosphere for Potential Hazards
  - d. Search and Rescue
    - i. Protection of Life
    - ii. Process
  - iii. Incident Commander (IC)
  - e. Exposure Protection
    - i. Exposures can be Protected in Different Ways
    - ii. Confinement and containment
    - iii. Flammable Liquids Vapor Control and Fire Extinguishment
    - iv. Pressurized-Gas Cylinder Vapor Control and Fire Extinguishment
  - f. Hazardous Materials Control Activities
    - i. Defensive Control Activities
    - ii. Absorption/adsorption
    - iii. Diking, damming, diversion, and retention
    - iv. Dilution
    - v. Vapor dispersion and suppression
    - vi. Remote shut-off
    - g. Decision to Withdraw
      - i. IC Decisions
    - h. Recovery
      - i. The recovery phase
      - i. When to Terminate the Incident
      - i. Decision Made by IC
    - j. Crime or Terrorist Incident
      - i. Precautions

- ii. Actions to Ensure Safety
- iii. Measures to Preserve Incident Evidence
- iv. Use of Photography
- v. Number of Responders Working Within the Area
- 34. Hazardous Materials: Decontamination Techniques
  - a. Contamination
    - i. Cross-Contamination
  - b. Types of Decontamination
    - i. Emergency decontamination
    - ii. Gross decontamination
    - iii. Technical decontamination
    - iv. Mass decontamination
  - c. Methods of Decontamination
    - i. Absorption
    - ii. Adsorption
    - iii. Dilution
    - iv. Disinfection
    - v. Disposal
    - vi. Solidification
    - vii. Emulsification
    - viii. Vapor dispersion
    - ix. Removal
    - x. Vacuuming
  - d. The Decontamination Process
    - i. Steps in decontamination
    - ii. Medical follow-up
- 35. Terrorism Awareness
  - a. Fire service response to terrorist incidents
  - b. Potential Targets and Tactics
    - i. Infrastructure targets
    - ii. Symbolic targets
    - iii. Civilian targets
  - iv. Ecoterrorism
  - v. Agroterrorism

- vi. Cyberterrorism
- c. Agents and Devices
  - i. Explosives and incendiary devices
  - ii. Chemical agents
  - iii. Biological agents
  - iv. Radiological agents
- d. Operations
  - i. Initial actions
  - ii. Interagency coordination
  - iii. Decontamination
  - iv. Mass casualties
  - v. Additional resources
- 37. Fire Detection, Protection, and Suppression Systems
  - a. Fire Alarm and Detection Systems
    - i. Fire alarm system components
    - ii. Residential fire alarm systems
    - iii. Alarm-initiating devices
    - iv. Alarm notification appliances
    - v. Other fire alarm functions
    - vi. Fire alarm annunciation systems
    - vii. Fire department notification
  - b. Fire Suppression Systems
    - i. Automatic sprinkler systems
    - ii. Standpipe systems
    - iii. Specialized extinguishing systems
    - iv. Dry chemical and wet chemical extinguishing systems
    - v. Clean agent extinguishing systems
    - vi. Fire fighters must use SCBA protection
- 38. Fire Cause Determination
  - a. Who Conducts Fire Investigations
    - i. Fire Department
    - ii. Law Enforcement Authority
    - iii. Investigation Assistance
  - b. Causes of Fires

- i. Point of Origin
- ii. Fire Cause Statistics
- iii. Accidental fire causes
- c. Determining the Origin and Cause of a Fire
  - i. Identifying the point of origin
  - ii. Digging Out
  - iii. Collecting and Processing Evidence
  - iv. Identifying Witnesses
- d. Observations During Fire-Ground Operations
  - i. Fire Investigator
  - ii. Dispatch and response
  - iii. Arrival and size-up
  - iv. Entry
  - v. Search and rescue
  - vi. Ventilation
  - vii. Suppression
  - viii. Overhaul
  - ix. Injuries and fatalities
- e. Securing and Transferring the Property
- f. Incendiary Fires
  - i. Indications of Arson
- g. Cause Determination
- h. Arsonists
  - i. Pyromaniacs
  - ii. Juvenile Fire-Setters
  - iii. Arsonist Motives

**METHODS OF INSTRUCTION:**

Lecture, discussion and documentations/simulations will serve as the medium of instruction. Audio-visual aids will be utilized as they facilitate meaningful instruction. Regular assignments will be made for out-of-class study and research. Individual guidance will be provided as required. Skills demonstration and skill exercises.

**OUT OF CLASS ASSIGNMENTS:**

Required Outside Hours:

Assignment Description:

Writing:

Students will write reports based on simulated fire investigations as required by State Fire Training.

Given pictures of various containers, the students will identify the proper container size, product contained within and/or specific site identification numbers in written assignment, evaluated by instructor to SFT standards.

Required Outside Hours:

Assignment Description:

Reading:

Students will review fire behavior, point of origin, and cause determination in Fundamentals of Fire Fighter Skills.

Students will review hazardous materials, potential hazards, the appropriate personal protective equipment, isolation distances and the appropriate emergency response actions in the Emergency Response Guidebook

Required Outside Hours:

Assignment Description:

Outside:

Students will practice donning personal protective equipment and tying knots and hitches.

Students will perform inspections and maintenance on tools and personal protective equipment.

**METHODS OF EVALUATION:**

Writing assignments

Percent of total grade: 20.00 %

Written Homework; Fire Reports

Problem-solving assignments

Percent of total grade: 30.00 %

Homework Problems; Lab Reports; Quizzes; State Fire Training Exams

Skill demonstrations

Percent of total grade: 30.00 %

Class Performance/s; State Fire Training Performance Exams

Objective examinations

Percent of total grade: 20.00 %

State Fire Training Multiple Choice; True/False

## **REPRESENTATIVE TEXTBOOKS:**

International Association of Fire Chiefs and National Fire Protection Association. Fundamentals of Fire Fighter Skills Evidence-Based Practices. Jones & Bartlett Learning, LLC, 2019.

State Fire Training Fire Fighter I Academy Text Book

ISBN: 1284098214

Reading Level of Text, Grade: 12

## **Recommended Other Texts and Materials**

State Fire Training Fire Fighter I Curriculum 2019 o <http://osfm.fire.ca.gov/training/firefighter>

Firefighters Handbook on Wildland Firefighting (Teie, William C, Deer Valley Press, Third Edition, ISBN: 1-931301-16-6)

CSTI Hazardous Materials / First Responder Operational o <http://www.caloes.ca.gov/for-schools-educators/training/csti-training-support-compliance/hazardous-materials-outreach-training-program>

Department of Transportation / Emergency Response Guide 2019

Low Angle Rope Rescue Operations o <http://osfm.fire.ca.gov/training/pdf/LARRO.StManual.pdf>

The New Generation Fire Shelter, NFES 2710,

IS-100 Introduction to Incident Command System, I-100, Instructor Guide

NWCG ? S130 NFS2730 o <https://onlinetraining.nwcg.gov/node/177>

NWCG ? S190 NFES2901 o <https://onlinetraining.nwcg.gov/node/169>

SFT Fire Control 6 ? Wildland Fire Fighting Essentials o State Fire Training download

IS-100 Introduction to Incident Command System, I-100, Instructor Guide o

<http://training.fema.gov/EMIweb/IS/is100lst.asp>

IS-700 National Incident Management System, An Introduction, Instructor Guide o

(<http://training.fema.gov/EMIWeb/is/is700alst.asp>)

IS 800 National Incident Management System o <https://training.fema.gov/is/courseoverview.aspx?code=IS-800.b>

IS 800 National Incident Management System o <https://training.fema.gov/is/courseoverview.aspx?code=IS-800.b>

SFT - Vehicle Extrication o <http://osfm.fire.ca.gov/training/pdf/Curriculum/VehicleExtrication-CoursePlan.pdf>

SFT Fire Fighter Survival Manual o <http://osfm.fire.ca.gov/training/pdf/FFSurvival.StManual.pdf>

NIMS Incident Command Field Guide o <http://www.informedguides.com/nims-community/>

Cal Fire ? Handbooks o <http://calfireweb.fire.ca.gov/library/handbooks/> o Section 4300 Wildland Fire Training Sections

Firefighter Functional Fitness o <http://firefighterfunctionalfitness.com/>



**ARTICULATION and CERTIFICATE INFORMATION**

Associate Degree:

CSU GE:

IGETC:

CSU TRANSFER:

Not Transferable

UC TRANSFER:

Not Transferable

**SUPPLEMENTAL DATA:**

Basic Skills: N

Classification: Y

Noncredit Category: Y

Cooperative Education:

Program Status: 1 Program Applicable

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department:

CSU Crosswalk Course Number:

Prior to College Level: Y

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: C

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000587522

Sports/Physical Education Course: N

Taxonomy of Program: 213300