

FIRE 290 Course Outline as of Fall 2024

CATALOG INFORMATION

Dept and Nbr: FIRE 290

Title: FIREFIGHTER ACADEMY

Full Title: Firefighter Academy

Last Reviewed: 3/9/2020

Units	Course Hours per Week		Nbr of Weeks		Course Hours Total	
Maximum	17.50	Lecture Scheduled	8.00	21.5	Lecture Scheduled	172.00
Minimum	17.50	Lab Scheduled	19.25	14.5	Lab Scheduled	413.88
		Contact DHR	0		Contact DHR	0
		Contact Total	27.25		Contact Total	585.88
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 344.00

Total Student Learning Hours: 929.88

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

**Catalog Description:**  
An intensive series of skills and knowledge needed for the entry level professional fire fighter to perform his/her duties safely, effectively and competently. Combined with Emergency Medical Technician, meets the educational requirements for Firefighter I and Firefighter II certification as established by the State Board of Fire Services. Course also includes two overnight sessions. Upon successful completion of the wildland component, students also receive a CAL FIRE Basic Firefighter Certificate.

**Prerequisites/Corequisites:**  
Course Completion of FIRE 71 and EMC 100 and FIRE 208 (or their equivalent as determined by the Dean of Public Safety Instruction)

**Recommended Preparation:**  
Eligibility for ENGL 100 OR EMLS 100 (formerly ESL 100) or equivalent

**Limits on Enrollment:**  
Current Class "C" California Driver License. A Fire Program Medical Clearance Statement signed by a physician for participation in a rigorous fitness program and other physical activities including climbing, rappelling, carrying and lifting heavy equipment (65-100 lbs.), rescue/body drags (165 lbs.) and live fire exercises (crawling and pulling pressurized hose lines). Said statement is valid one year from the date of endorsement.

### **Schedule of Classes Information:**

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Transfer Credit:

Repeatability: Two Repeats if Grade was D, F, NC, or NP

### **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	<b>Effective:</b>	<b>Inactive:</b>
<b>CSU GE:</b>	<b>Transfer Area</b>	<b>Effective:</b>	<b>Inactive:</b>
<b>IGETC:</b>	<b>Transfer Area</b>	<b>Effective:</b>	<b>Inactive:</b>
<b>CSU Transfer:</b>	<b>Effective:</b>	<b>Inactive:</b>	
<b>UC Transfer:</b>	<b>Effective:</b>	<b>Inactive:</b>	

**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

### **COURSE CONTENT**

#### **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

1. Describe fire department organization and the expectations of entry level firefighters.
2. Differentiate types of fire behavior and its impact on structural and wildland situations.
3. Demonstrate and apply the use of fire department equipment through its selection for given firefighting tasks.
4. Demonstrate and apply knowledge of strategies, tactics and incident command through the selection and implementation of firefighting methods and the application of the Incident Command System (ICS).
5. Demonstrate an understanding of safe firefighting practices by adhering to minimum standard safety procedures.

#### **Objectives:**

At the conclusion of this course, the student should be able to:

1. Identify course objectives, requirements, assignments, activities, evaluation methods and participation requirements.
2. Describe the Firefighter I and Firefighter II certification track and capstone test book process. Identify the roles, functions, and responsibilities of the professional firefighter.
3. Describe the mission of the fire service and the role of the firefighter and the Standard Operating Procedures (SOP's), rule and regulations used by fire departments.
4. Identify common types of accidents and injuries experienced in the fire service and the way to maintain physical fitness, a healthy lifestyle and follow life safety initiatives.
5. Identify the components of FSTEP-Behavioral Health And Cancer Awareness 1A
6. Identify the components of a structural personal protective ensemble and the ability to don and doff following academy standards.
7. Identify the regulations and reasons for wearing a Self-Contained Breathing Apparatus and demonstrate the ability to don and use in an Immediately Dangerous to Life and Health (IDLH) environment.
8. Demonstrate the ability to respond on an apparatus to an emergency scene following all applicable safety regulations, utilizing all Personal Protective Equipment (PPE).
9. Demonstrate the ability to operate at an emergency scene following established procedures wearing proper PPE and to establish and work in protected work areas.
10. Demonstrate the ability to receive a phone call using established procedures and relay information.
11. Demonstrate the ability to initiate a response to a reported emergency obtaining all necessary information, correctly operating communications equipment and relaying information to the dispatch center.
12. Demonstrate the ability to transmit and receive messages relaying accurate information using fire department radios.
13. Demonstrate the ability to communicate the need for team assistance.
14. Demonstrate the ability to complete a basic incident report.
15. Demonstrate the ability to tie a knot appropriate for hoisting tools securely as directed.
16. Demonstrate the ability to conduct Low Angle Rope Rescue Operations (LARRO) using the appropriate rope, knots, anchor systems attachments, fall restraints and other safety equipment.
17. Demonstrate the ability to safely transport, operate and maintain a variety of hand and power tools.
18. Demonstrate the ability to illuminate an area of an emergency scene using electrical and lighting equipment according to the manufacturer's and agency guidelines.
19. Demonstrate the ability to clean, maintain a wide variety of fire department tools and Equipment including power plants, power tools and lighting.
20. Describe common building materials, construction types and the dangerous conditions that are created by fire.
21. Identify and mitigate dangerous fire behavior conditions in a structure while ensuring firefighter safety.
22. Identify the correct selection of a fire extinguisher for a given fire and the proper handling techniques for extinguishing a Class A, B or C fire.
23. Demonstrate as a member of a team the ability to connect a fire department pumper to a water supply ensuring a secure connection and an unobstructed water flow.
24. Demonstrate the ability to place a hose into service on an assigned engine and to place nozzles on attack lines and to inspect, maintain and place hose in or out of service.
25. Demonstrate the ability to complete an annual service test on a Fire hose.
26. Demonstrate the ability to secure (turn-off) all building utilities safely.
27. Demonstrate the ability to set up, extend, adjust the angle of and climb ground ladders observing safety guidelines and agency protocols.
28. Demonstrate the ability to use forcible entry tools and equipment to remove barriers and

- produce openings that are safe and ready for use.
29. Demonstrate the ability to conduct search and rescue operations in a structure under conditions of poor visibility, locating and removing while maintaining team safety and integrity including respiratory protection.
  30. Demonstrate the ability to attack an interior structure fire deploying an attack line and ladders to gain access to the fire area, effectively apply water, locate and control hidden fires and bring the fire under control operating as a member of a team.
  31. Demonstrate the ability to coordinate an interior attack line.
  32. Demonstrate the ability to perform horizontal ventilation on a structure, remove obstructions to ventilation and clear structures of smoke as part of a team.
  33. Demonstrate the ability to perform vertical ventilation on a structure by positioning ladders, creating specific openings, removing all barriers without compromising building integrity, releasing products of combustion and retreating safely while working as a team.
  34. Demonstrate the ability to conserve property to protect the building and its contents from further damage while acting as a member of a team.
  35. Demonstrate the ability to overhaul a fire scene, discover and extinguish all hidden fires, preserve fire cause and origin evidence without compromising structural integrity.
  36. Demonstrate the ability to activate an emergency call for assistance and exit a hazardous area without endangering others and maintaining team integrity.
  37. Demonstrate the ability to extinguish exterior fires in stacked and piled materials and in small unattached structures.
  38. Demonstrate the ability to extinguish a passenger vehicle fire avoiding hazards and conducting overhaul as a member of a team.
  39. Demonstrate the ability to extinguish an ignitable liquid fire.
  40. Demonstrate the ability to control a flammable gas cylinder fire.
  41. Describe the process of preparing and assembling for a response to a wildland incident that meets local agency requirements.
  42. Demonstrate the ability to don a wildfire personal protective ensemble and new generation fire shelter within the timeframes established by local agencies.
  43. Describe the various tools and equipment used in wildfire suppression and the procedures used to properly maintain them.
  44. Describe basic wildland fire behavior and the impact of weather, slope, fuels and topography.
  45. Demonstrate the ability to recognize hazards and unsafe conditions at a wildland fire and communicate them to a supervisor.
  46. Demonstrate the ability to construct a fireline that conforms to the construction standards of the Authority Having Jurisdiction (AHJ).
  47. Demonstrate the ability to locate and abate burning materials and unburned fuel that threaten the fireline.
  48. Describe the methods used to reduce the threat of fire exposure to improved properties.
  49. Demonstrate the ability to mop-up a fire area, locating and extinguishing burning fuels that threaten escape.
  50. Describe the steps involved in patrolling and maintaining control of a fire area.
  51. Demonstrate the ability to recognize a hazardous material, correctly identify the material involved, take appropriate personal protective actions, initiate a response and secure the area.
  52. Demonstrate the ability to protect persons, properties, and the environment from the effects of hazardous materials, initiate the proper notification process and secure the release area.
  53. Demonstrate the ability to perform emergency and mass decontamination procedures and identify contaminated items for subsequent control.

54. Demonstrate the ability to perform basic control, containment and confinement techniques to control a hazardous materials release and protect emergency responders from contamination.
55. Describe the codes that govern confined space operations, the hazards of confined space operations and the equipment used in confined space operations.
56. Demonstrate the ability to safely extricate and remove a patient from a vehicle using a variety of extrication techniques.
57. Demonstrate role in assisting rescue operations team.
58. Describe the purpose and the operational principles of the National Incident Management System (NIMS).
59. Describe the purpose and the functions of the Incident Command System (ICS).
60. Demonstrate the ability to complete a physical training regimen required of entry level firefighters.
61. Demonstrate ability to complete fire and life safety surveys and presentations.

## **Topics and Scope:**

### **\*I. Orientation and Administration**

- A. Review of training facilities
- B. Review of course syllabus
  1. Objectives
  2. Requirements
  3. Assignments
  4. Methods of evaluation
  5. Participation requirements

### **\*II. Firefighter I and Firefighter II Certification Process**

- A. Firefighter I and II certification track
- B. Courses required for Firefighter I and Firefighter II
  1. Firefighter I
  2. Wildland Firefighter
  3. Hazardous Materials First Responder
  4. Confined Space Awareness
  5. IS-700
  6. IS-700A
- C. Capstone task book process

### **\*III. Organization and Responsibility**

- A. Organization of the fire department, its mission and the role of the firefighter
- B. Fire department standard operating procedures (SOPs)
- C. Roles of allied agencies
- D. Assistance programs for fire personnel
- E. Fire department regulations and codes

### **\*IV. Firefighter Health and Safety**

- A. Firefighter injuries, accidents and causes
- B. Physical fitness and wellness programs
- C. National Fire Protection Association (NFPA) standard 1500
- D. National Fallen Firefighters Foundation (NFFF) Life Safety Initiatives
- E. Behavioral Health
- F. Cancer Awareness

### **V. Structural Personal Protective Ensemble**

- A. Components of and the protection provided by structural personal protective ensemble
- B. Structural personal protective ensemble standards

- C. Limitations of structural PPE
- D. Inspecting, cleaning and maintenance of structural personal protective ensemble.
- E. Donning and doffing structural personal protective ensemble
- VI. Self-Contained Breathing Apparatus (SCBAs)
  - A. Regulations governing respiratory protection
  - B. Consequences of exposure to products of combustion
  - C. Uses and limitations of SCBAs
  - D. Components and inspection of SCBAs
  - E. Donning and doffing SCBAs
  - F. SCBA breathing techniques & emergency procedures
  - G. Physical requirements of the SCBA user
  - H. Replacing SCBA cylinders
  - I. Use of SCBAs in restrictive environments
- VII. Responding on an Apparatus
  - A. Mounting and dismounting apparatus
  - B. Hazards associated with riding on an apparatus and prohibited practices
  - C. Personal protective equipment (PPE) used on apparatus
- VIII. Operating at an Emergency Scene
  - A. Hazards present at emergency scenes
  - B. Protective equipment used at emergency scenes
  - C. Deployment of traffic and scene control devices
  - D. Mounting and dismounting an apparatus in traffic conditions
- IX. Operating a Phone in a Non-emergency Situation
  - A. Fire department procedures for answering non-emergency phone calls
  - B. Operation of fire department phones and intercom equipment
- X. Initiating a response to an Emergency
  - A. Procedures for reporting emergencies and taking and receiving alarms
  - B. Procedures, radio codes and clear text used in communications
  - C. Communication center information needs
  - D. Types and operations of fire department communications equipment
  - E. Relay and recording information
- XI. Operating Fire Department Radios
  - A. Fire department procedures for and etiquette for routine and emergency radio traffic.
  - B. Fire department radio procedures for emergency evacuation.
  - C. Basic types and operations of fire department radios
  - D. Communicating need for Team Assistance
- \*XII. Completing a Basic Incident Report
  - A. Information collected
  - B. Writing Style
  - C. Identify purpose of and usefulness of accurate reports
  - D. Describe how to obtain necessary information
- XIII. Ropes and Knots
  - A. Types and uses of ropes
  - B. Types and uses of knots
  - C. Life safety and utility rope
  - D. Conditions for putting rope out of service
  - E. Types of knots used for given tools, ropes and situations
  - F. Hoisting methods
  - G. Use of rope in response activities.
  - H. Tying knots
  - I. Hoisting tools
- XIV. Low Angle Rope Rescue Operations (LARRO)

- A. Low and high angle definitions
- B. Rope rescue equipment
- C. Rescue knots and hitches
- D. Anchor systems
- E. Types of litters and rescue and ambulatory victim packaging
- F. System attachments and fall restraints
- G. Components of a rope rescue system
- H. Belay/Safety line systems
- I. Descending and ascending
- J. Lower and raise mechanical advantage systems
- K. Load releasing methods
- L. Rescue scene organization and management
- M. Litter walkouts
- N. Ladder rescue systems
- O. Rescue evolutions
- XV. Hand and Power Tools
  - A. Types and uses of hand and power tools
  - B. Operation of hand and power tools
- XVI. Portable Electric and Lighting Equipment
  - A. Safety principles and practices for portable electrical equipment
  - B. Power supply capacities and limitations
  - C. Light deployment and operations
  - D. Use of cords and connectors
  - E. Principles and use of Ground Fault Interrupters (GFI's)
- XVII. Maintenance of Tools and Equipment
  - A. Cleaning of tools and equipment
  - B. Use of cleaning solvents
  - C. Manufacturer and department guidelines for removing from service
  - D. Maintenance procedures for tools and equipment
  - E. Recording and reporting procedures for tools and equipment
  - F. Maintaining saws, Power Plants, Power Tools and Lighting Equipment
- XVIII. Building Construction and Related Hazards
  - A. Common building materials and construction types
  - B. Structural integrity of construction types under fire conditions
  - C. Dangerous building conditions created by fires
  - D. Doors, windows and wall construction found in northern California
- XIX. Fire Behavior
  - A. Physical states of matter fuels are found
  - B. Classifications of fire
  - C. Methods of heat transfer
  - D. Relationship of oxygen content to fire growth and life safety
  - E. Fire behavior in energy efficient buildings, high rises, below grade structures and wind driven environments.
  - F. Products of combustion and principles of thermal layering in a structure fire
  - G. Signs, causes, effects and prevention of backdrafts
- XX. Fire Extinguishers
  - A. Types of, rating systems for and risks associated with each class of fire extinguishers
  - B. Operating methods and limitations of portable extinguishers
  - C. Selection and operation of portable extinguishers
- XXI. Water Supply Systems
  - A. Types and components of municipal and rural water systems
  - B. Loading and off-loading procedures for a mobile water supply apparatus

- C. Static water supply sources
- D. Fire hydrant operations
- E. Procedures for connecting to various water sources
- F. Tanks and water transfer equipment

## XXII. Fire Hose

- A. Principles of fire streams
- B. Types, design, operation effects of pressure and flow capability of nozzles
- C. Types, designs and uses of fire hoses
- D. Fittings, tools and appliances
- E. Sizes and types of attack lines and their applications
- F. Types of hose rolls, loads and deployments
- G. Hose inspection, documentation, and removing from service procedures
- H. Hose cleaning methods
- I. Performing an Annual Service Test on Fire Hose
- J. Advancing hose lines
- K. Opening, closing and adjusting nozzle flow and patterns
- L. Correct fire stream application
- M. Coupling and uncoupling hose
- N. Rolling and re-loading hose
- O. Carrying hose
- P. Replacing burst sections of hose
- Q. Hand laying supply hose and connecting to hydrants
- R. Forward and reverse lay hydrant to pumper connections
- S. Use of hose washing and drying equipment
- T. Replacing hose gaskets

## XXIII. Utility Control at Emergencies

- A. Properties, principles and safety concerns of electrical and photovoltaic systems
- B. Properties, principles and safety concerns of gas systems
- C. Properties, principles and safety concerns of water systems
- D. Utility disconnect methods and their hazards
- E. Utility control devices and their operation
- F. Related hazards

## XXIV. Ground Ladder Operations

- A. Type, parts and construction features of ground ladders
- B. Uses of ground ladders
- C. Types of lifts and carries
- D. Methods to secure ladders
- E. Climbing techniques
- F. Climbing angles and safety limits
- G. Evaluation of reliable foundations and structures for placing ladders
- H. Cleaning and maintaining ladders
- I. Lifting and carrying ladders
- J. Raising and moving ladders
- K. Extending and locking the fly
- L. Locking in and working off ground ladders
- M. Judging ladder height requirements

## XXV. Forcible Entry

- A. Doors, windows and walls found in residential and commercial construction in northern California
- B. Types and uses of hand and power tools used in forcible entry
- C. Operation of doors, windows and locks
- D. Dangers associated with forcible entry of doors, windows and locks



E. Transportation and use of forcible entry tools on

1. Doors
2. Windows
3. Walls
4. Locks

XXVI. Structure Fire Search and Rescue Operations

- A. Primary and Secondary Search Techniques
- B. Use of thermal imaging cameras and other search tools
- C. Team member's roles and goals in search and rescue operations
- D. Respiratory protection considerations and determining tenable environments
- E. Methods and indicators used to find victims
- F. Managing the psychological effects of operating in obscure conditions
- G. Use of forcible entry tools and ground ladders in rescue operations
- H. Victim carry and removal methods
- I. Use of a SCBA to exit through restrictive passages
- J. Removing victims down ladders
- K. Rescuing a firefighter with non-functioning respiratory protection
- L. Rescuing a person with no respiratory protection

XXVII. Structural Fire Fighting Operations

- A. Precautions to be used when advancing hose lines
- B. Principles of exposure protection
- C. Role of the backup team in fire attack situations
- D. Fire control techniques and attacks at, above and below grade
- E. Locating and exposing hidden fires
- F. Application of water using direct, indirect and combination attacks
- G. Advancing charged and uncharged hose lines up ladders and up and down stairwells
- H. Operating charged hand lines while secured to a ladder
- I. Coordinating an Interior Attack Line

XXVIII. Horizontal Ventilation Operations

- A. Principles, advantages, limitations and effects of horizontal ventilation
- B. Safety considerations when conducting horizontal ventilation
- C. Transporting and operating ventilation equipment and ladders
- D. Procedures for breaking windows and door glass and removing obstructions
- E. Performing horizontal ventilation

XXIX. Vertical Ventilation Operations

- A. Principles, advantages, limitations and effects of vertical ventilation
- B. Techniques and safety precautions for venting flat, pitched roofs and basements
- C. Effects of construction type and fire time on the structural integrity of a building
- D. Indicators of potential collapse and roof failure
- E. Advantages and disadvantages of vertical and strip ventilation
- F. Transporting, hoisting and operating ventilation equipment and ladders
- G. Deploying roof ladders on pitched roofs from ground ladders for vertical ventilation
- H. Sounding a roof for integrity
- I. Cut roof and flooring materials to perform ventilation of roofs and basements
- J. Clear ventilation openings

XXX. Property Conservation

- A. Purpose of property conservation and the value to the public
- B. Methods used to protect property
- C. Types and uses of salvage covers
- D. Operations at properties protected by fire sprinklers, their control valves and methods for stopping the flow from a fire sprinkler.
- E. Procedures for protecting areas of origin

- F. Clustering furniture
- G. Deploying covering materials and rolling and folding for reuse
- H. Construction of water chutes, catch-all's and water removal methods
- I. Covering building openings in doors, windows, floors and roofs

#### XXXI. Overhaul

- A. Purpose and methods used to conduct overhaul
- B. Types of attack lines and water application devices most effective for overhaul
- C. Water application extinguishing methods that limit water damage
- D. Tools and methods used to expose hidden fires
- E. Dangers associated with overhaul
- F. Reasons for protecting fire scenes
- G. Signs indicating the area of origin and arson
- H. Preservation of fire cause evidence
- I. Protecting Evidence of Fire Cause and Origin
- J. Removal of floor, ceiling and wall components to expose void spaces without compromising structural integrity
- K. Deployment and operation of attack lines for overhaul using water for maximum effectiveness
- L. Exposing and extinguishing hidden fires in walls, ceilings and sub-floors.
- M. Preserving obvious the area of origin and signs of arson
- N. Evaluate for complete extinguishment
- O. Separation and removal of charred material while protecting the area of origin

#### XXXII. Structural Fire Fighter Survival

- A. Different personnel accountability systems
- B. Development of fire fighter survival attitudes
- C. Emergency communications procedures
- D. Initiating emergency calls in accordance with local policies
- E. Emergency evacuation methods for fire fighter survival
- F. Operating as a team member in visually obscured conditions
- G. Locating and following guide lines
- H. Evaluating areas for hazards
- I. Identifying "safe havens"

#### XXXIII. Exterior Fires

- A. Types of exterior fires
- B. Types of attack lines and water streams appropriate for stacked, piled materials and out door fires.
- C. Water application methods for exposure protection and fire extinguishment
- D. Collapse signs and dangers of stacked and piled materials
- E. Effects of extinguishing agents on different material configurations
- F. Tools and methods used to break up various materials
- G. Challenges related to complete extinguishment of stacked and piled materials
- H. Dangers of exposure to hazardous materials in storage buildings and container fires
- I. Operation of hand lines and master streams
- J. Breaking up materials using hand tools and water streams
- K. Evaluate and modify water application methods for maximum penetration
- L. Extinguishing an Ignitable Liquid Fire
- M. Controlling a Flammable Gas Cylinder Fire
- N. Assess patterns for fire origin determination
- O. Evaluate exterior fires for complete extinguishment

#### XXXIV. Passenger Vehicle Fires

- A. Fire stream application on vehicle fires
- B. Precautions when advancing hose lines towards a passenger vehicle

- C. Indicators that a fire stream has been properly applied to a vehicle fire
- D. Dangerous conditions created during a vehicle fire
- E. Accidents and injuries associated with vehicle fires and how to avoid them
- F. Methods to access locked trunks and engine compartments
- G. Passenger vehicle fuels
- H. Controlling fuel leaks
- I. Effectively applying water while maintaining flash fire protection
- J. Advancing minimum 1-1/2" of larger attack lines on a vehicle fire
- K. Exposing hidden fires

#### XXXV. Wildland Fire Suppression

- A. Cal Fire Mission & Organization
- B. Policies & Regulations
  - 1. Ethics, diversity, sexual harassment
  - 2. Code of conduct
  - 3. Working with inmate fire crews
- C. Station Operations
  - 1. Responding to emergency calls
  - 2. Radio communications
- D. Basic Fire Chemistry
  - 1. Fire Triangle
  - 2. Methods of heat transfer
- E. Wildland Fire Behavior
  - 1. Terminology
  - 2. Fuels
  - 3. Topography
  - 4. Weather
- F. Safety/Risk Management
  - 1. Wildland personal protective equipment (PPE)
    - a. Use and limitations of wildland PPE
    - b. Inspection and maintenance and cleaning procedures for wildland PPE
    - c. Donning wildland PPE
  - 2. 18 "Watch Out" situations
  - 3. Ten standing firefighting orders
  - 4. Lookouts, communications, escape routes, safety zones (LCES)
  - 5. Common denominators of fire fatalities
  - 6. Fireline hazards
  - 7. Downhill fireline construction
  - 8. Avoiding entrapment
  - 9. Human factors and their effect on fireline safety and crew cohesion
  - 10. Situational awareness
  - 11. Use of the Incident Response Pocket Guide (IRPG)
  - 12. Hydration
  - 13. SCBA use in wildland fires
  - 14. Fire shelters
    - a. Use, limitations and inspection
    - b. Agency policy for use
    - c. Deployment
  - 15. Fire blankets and curtains
    - a. Types
    - b. Deployment
  - 16. Using vehicles as refuge
  - 17. Using structures as refuge

18. Burn treatment of firefighters
  19. Airtanker retardant drop safety considerations
  20. Rotary wing aircraft safety considerations
  21. Bulldozer operations safety considerations
  22. Power line and electrical considerations
  23. Three strikes and you're out
- G. Wildland firefighting equipment
1. Fire hose
    - a. Sizes and construction
    - b. Care and maintenance
    - c. Hose couplings
    - d. Hose rolls
    - e. Hose lays
      - i. Progressive hose lays
      - ii. Reel line use
    - f. Picking up and draining hose
  2. Tools and Equipment
    - a. Traffic control devices and signals
    - b. Road flares (fusees)
  - i. How to ignite and extinguish fusees
  - ii. Use of fusees as firing tools
    - c. Drip torch use and maintenance
    - d. Fireline flagging
    - e. Chain Saw use.
  3. Firefighting aircraft
    - a. Fixed wing aircraft
    - b. Rotary wing aircraft
  4. Mobile Equipment
    - a. Fire apparatus identification
    - b. Warning devices
    - c. Chock blocks and seatbelts
    - d. Backing hand signals
    - e. Safety vests
  5. Handtools
    - a. Brush hook
    - b. Pulaski
    - c. Double bit, single bit and pick-headed axes
    - d. Round and square point shovels
    - e. McLeod
    - f. Wire broom
    - g. Rhino tool
    - h. Combi-tool
    - i. Tool maintenance
- H. Wildland firefighting principles and operations
1. Wildland firefighting terminology
  2. Parts of a wildland fire
  3. Wildland firefighting strategies
    - a. Direct attack
    - b. Indirect attack
  4. Wildland fire uses of water
  5. Wildland hoselays
  6. Mobile attack

- 7. Mop-up and control
  - a. Dry mop-up methods
  - b. Wet mop-up methods
- 8. Handline construction
  - a. Reinforcing a handline and burning out operations
  - b. Building a cup or a trench.
- 9. Conducting patrols
- XXXVI. Recognizing Hazardous Materials/Weapons of Mass Destruction (WMDs)
  - A. Definitions of hazardous materials and WMDs
  - B. Risks associated with hazardous materials and WMDs
  - C. Recognizing the presence of hazardous materials or WMDs at an incident
  - D. Identifying hazardous materials and WMDs
  - E. Potential outcomes of hazardous materials incidents
  - F. Additional resources required in a hazardous materials response
  - G. Mandatory hazardous materials notifications
  - H. The role of the firefighter in an emergency response plan
  - I. Use of the Department of Transportation (DOT) Emergency Response Guidebook (ERG)
  - J. Protective actions to secure a hazardous materials response scene
  - K. Use of Material Safety Data Sheets (MSDS) to identify hazardous materials, their hazards and appropriate protective actions
- XXXVII. Identifying/Analyzing Hazardous Materials/WMDs
  - A. Basic hazardous material terms
  - B. Physical and chemical properties of hazardous materials
  - C. Hazard and risk assessment techniques
  - D. Procedures for initial hazardous materials/WMD response
  - E. Local response protocols
  - F. Using the DOT ERG to identify containers and materials
  - G. Determining if hazardous materials have been released
  - H. Limiting access to an area
- XXXVIII. Emergency Decontamination
  - A. Capabilities and limitations of PPE
  - B. Modes people, personnel, equipment and apparatus become contaminated
  - C. The importance, procedures and limitations of decontamination
  - D. Preparing a decontamination area
  - E. Performing decontamination
  - F. Perform Mass Decontamination for Ambulatory and Non-Ambulatory Victims at Hazardous Material/WMD Incident
- XXXIX. Mitigating a Hazardous Materials/WMD incident
  - A. Product control operations
    - 1. Diking
    - 2. Absorption
    - 3. Damming
    - 4. Dilution
    - 5. Retention
    - 6. Remote valve shut-off
    - 7. Vapor dispersion
  - B. Tools and equipment used for product control
  - C. Local decontamination procedures
  - D. Performing control, containment and confinement operations
- XL. Confined Space Awareness
  - A. Codes and regulations that govern operations within confined spaces

- B. Identification and permitting of confined spaces
- C. Hazards of confined spaces
- D. Equipment and procedures used in a confined space rescue
- E. Confined space operational positions and their responsibilities under CAL-OSHA
- F. Preparing personnel for a confined space entry

#### XLI. Auto Extrication

- A. Extrication size-up and safety precautions
- B. Extrication tools and their application
- C. Removing windshields and windows
- D. Opening doors using panel cutters and a spreader and wedge
- E. Pulling a door with a come-along
- F. Removing a roof with an air chisel
- G. Pulling a steering wheel with a come-along, high lift jack, scissor jack and seat belts and hood
- H. Cutting a steering wheel
- I. Moving foot peddles using seatbelts
- J. Using jacks to raise a dashboard
- K. Pulling a front seat using a come-along and high lift jack
- L. use of cribbing to stabilize a vehicle
- M. Maintenance and use of auto extrication tools
- N. Rescuing entrapped victims in a Motor Vehicle
- O. Special considerations when working on alternate fuel vehicles

#### XLII. Assisting Rescue Operations Teams

- A. Identify Types of Rescue Operations
- B. Roles at Technical Rescue Operations
- C. Hazards at Technical Rescue Operations
- D. Assist Rescue Teams as a Member Of the Team When Assigned

#### \*XLIII. National Incident Management System (NIMS) IS-700

- A. Intent of NIMS
- B. NIMS principles and concepts
- C. NIMS components
  - 1. Preparedness
  - 2. Communications
  - 3. Information management
  - 4. Resource management
  - 5. Command and management
- D. The National Integration Center

#### XLIV. Introduction to the Incident Command System (ICS-100)

- A. ICS applications
- B. The purpose and requirements for using ICS
- C. Basic features and terminology used in ICS
- D. The five major ICS management functions
- E. Roles and functions of the Incident Commander (IC)
- F. Roles and functions of the Command Staff
- G. Roles and functions of the General Staff
- H. Unified Command and its features and advantages
- I. Implementing ICS

#### XLV. Intermediate ICS (ICS-200)

- A. Organizational overview of ICS
- B. Incident facilities
- C. Incident resources
- D. Common responsibilities associated with ICS assignments

## XLVI. Physical Training

- A. Cardiovascular endurance
- B. Dynamic strength
- C. Flexibility
- D. Physical fitness
- E. Body Mass Index (BMI)

## XLVII. Fire and Life Safety

- A. Performing a Fire Safety Survey in an Occupied Structure
- B. Presenting Fire Safety Information to Station Visitors or Small Groups
- C. Preparing a Pre-incident Survey

Topics and Scope pertains to both lab and lecture

\*Pertains to lecture only

### Assignment:

#### Lecture-Related Assignments:

1. Reading approximately 100 pages per week from assigned text and handout materials
2. Quiz on academy policies and procedures as assigned
3. Quizzes
4. Three to twelve fire-related written reports and exercises
5. Written midterm and final written exam

#### Lab-Related Assignments:

1. Practice and demonstrations:
  - A. Core firefighting skills including SCBA's, ropes and knots, ladders, hose, fire streams, physical fitness tests, and wildland firefighting
  - B. Firefighting, rescue and hazardous materials scenarios and evolutions utilizing the ICS including participation in live fire exercises
  - C. Physical fitness skills
2. Demonstration of scenario-based skills and problem solving
3. Final physical fitness test and skills exams

#### Lecture- and Lab-Related Assignments:

1. Attendance at a minimum of 554 hours of instruction in order to pass the course.

### Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Fire related written reports and exercises
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Writing 5 - 10%
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**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Demonstration of scenario-based skills and problem solving
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Problem solving 5 - 10%
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**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Practice and demonstrations

Skill Demonstrations  
35 - 50%

**Exams:** All forms of formal testing, other than skill performance exams.

Quizzes; written midterm and final written exam; final physical fitness test and skills exams

Exams  
20 - 30%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

Attendance at a minimum of 554 hours of instruction

Other Category  
20 - 30%

### **Representative Textbooks and Materials:**

IFSTA Essentials of Firefighting. 7th ed. Fire Service Publications. 2018  
IFSTA Essentials of Firefighting Student Workbook. 7th ed. Fire Service Publications. 2018  
Santa Rosa Junior College Firefighter I Academy Procedures Manual. 2018  
Santa Rosa Junior College Firefighter I Academy Performance Standards. 2020  
Calif. Department of Forestry and Fire Protection Firefighter Basic Training Syllabus. 2018  
Hazardous Materials First Responder Syllabus "Operations", California Specialized Training Institution. 2009 (classic)  
Emergency Response Guidebook, Department of Transportation. 2018  
S-130 Firefighter Workbook. National Wildfire Coordinating Group (NWCG). 2003 (classic)  
S-131 Firefighter Type I Workbook. NWCG. 2004 (classic)  
S-190 Introduction to Wildland Fire Behavior. NWCG. 2006 (classic)  
Fireline Handbook. NWCG. 2004 (classic)  
Incident Response Pocket Guide (IRPG). 2018  
ICS 420-1 Field Operations Guide. Firescope. 2007 (classic)  
Critical Stress Debriefing, Syllabus. instructor prepared materials  
Personal Exposure Reporting, California Professional Firefighters Association. 2009 (classic)  
<https://osfm.fire.ca.gov/media/9751/attachment-12-behavioral-health-cancer-awareness.pdf>  
NFPA 1072: Haz Mat/Weapons of Mass Destruction - sec. 6.3.1. 2017  
NFPA 1001: Standard for Fire Fighter Professional Qualifications. 2019