

FIRE 0103 - CAL FIRE BASIC FIREFIGHTER

Catalog Description

Prerequisite: Completion of FIRE 170 with grade of "C" or better, and possess Public Safety First Aid and CPR certification or equivalent as determined by the Program Coordinator

Hours: 219 (139.5 lecture, 79.5 laboratory)

Description: Provides the skills and knowledge needed for the entry-level firefighter to perform his/her duties safely, effectively, and competently. The curriculum is based on CAL FIRE policy, the 2013 edition of NFPA 1001 Standard for Firefighter Professional Qualifications, the 2012 edition of NFPA 1051 Standard for Wildland Firefighter Professional Qualifications, and the 2008 edition of NFPA 472 Standard for Competence of responders to Hazardous Materials/Weapons of Mass Destruction Incidents. (not transferable)

Course Student Learning Outcomes

- CSLO #1: Outline the role of a Cal Fire Firefighter.
- CSLO #2: Explain safety and risk management techniques of wildland firefighting.
- CSLO #3: Explain how to maintain firefighting equipment used by firefighters in the suppression of different types of fires, rescues and hazard mitigation.
- CSLO #4: Explain and demonstrate offensive and defensive wildland firefighting operations.

Effective Term

Fall 2019

Course Type

Credit - Degree-applicable

Contact Hours

219

Outside of Class Hours

279

Total Student Learning Hours

498

Course Objectives

Lecture:

Unit 1

1. Identify facility requirements
2. Identify different levels of Firefighter 1 certification track
3. Identify course required for Basic Firefighter and Firefighter I
4. Describe the capstone task book process
5. Describe the organization of CAL FIRE's member assistance program
6. Describe CAL FIRE policy on Equal Employment Opportunity, Harassment and Diversity
7. Define the role of a firefighter in the organization
8. State and describe the mission of CAL FIRE

9. Describe policies and standard operating procedures and rules and regulations as they apply to a firefighter
 10. Identify the role of other agencies as they relate to CAL FIRE
 11. Identify aspects of CAL FIRE Employee Assistance Program (EAP)
 12. Locate information in departmental documents and standard or code materials
 13. Describe the role of firefighters when working around inmates
 14. Identify fire apparatus types and those used by CAL FIRE
- Unit 2:

1. List common types of accidents or injuries and their causes
 2. Discuss the importance of physical fitness and a healthy lifestyle to the performance and duties of a firefighter
 3. Define the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program
 4. Discuss the value of fire and life safety initiatives in support of the Department's mission to reduce firefighter line-of-duty injuries and fatalities
 5. Describe the CAL FIRE Safety Program
 6. Discuss the importance of hydration and the effects of heat related illnesses
 7. Describe burn treatment provided to CAL FIRE employees
 8. Identify the components of structural personal protective ensemble
 9. Describe the protection provided by structural personal protective ensemble
 10. Explain the importance of standards for structural personal protective ensemble
 11. Describe the limitations of structural personal protective ensemble
 12. Identify the proper method for inspecting, cleaning, and maintaining structural personal protective ensemble
 13. Identify conditions requiring respiratory protection
 14. Describe potential long-term consequences of exposure to products of combustion
 15. Describe the uses and limitations of a self-contained breathing apparatus
 16. Identify the components of a self-contained breathing apparatus
 17. Describe operational inspection for a self-contained breathing apparatus
 18. Describe different donning procedures
 19. Describe different breathing techniques
 20. Describe indications for and emergency procedures used with a self-contained breathing apparatus
 21. Identify physical requirements of the self-contained breathing apparatus wearer
 22. Describe mounting and dismounting procedures for riding an apparatus
 23. Identify hazards associated with riding on an apparatus and ways to avoid them
 24. Describe prohibited practices
 25. Identify different types of departmental personal protective equipment and their use(s) for Hearing, seat belts, safety gates
 26. Identify potential hazards involved in operating at emergency scenes including vehicle traffic, utilities, and environmental conditions
 27. Describe proper procedures for mounting and dismounting an apparatus in traffic
 28. Describe procedures for safe operation at emergency scenes
 29. Identify the personal protective equipment available for members' safety at emergency scenes and work zone designations
 30. Use personal protective equipment
- Unit 3:
1. Describe CAL FIRE procedures for answering non-emergency phone calls
 2. Explain the procedures for reporting an emergency

3. Identify Department standard operating procedures for taking and receiving alarms
 4. Identify radio procedures, and clear text for communications
 5. List information needed by the Emergency Command Center
 6. Identify the different types of fire station communications equipment
 7. Describe CAL FIRE procedures and etiquette for routine radio traffic
 8. Describe CAL FIRE procedures and etiquette for emergency radio traffic
 9. Describe CAL FIRE procedures and etiquette for emergency radio evacuation signals
 10. Identify basic types and operations of fire department radios
 11. Identify the difference between routine and emergency radio traffic
- Unit 4:
1. Identify the types and uses of ropes
 2. Identify the types and uses of knots
 3. Describe the difference between life safety and utility rope
 4. Identify reasons for placing rope out of service
 5. List types of knots to use for given tools
 6. List types of knots to use for given ropes
 7. Describe types of knots to use for given situations
 8. Describe hoisting methods for tools and equipment
 9. Discuss the use of rope(s) to support response activities
 10. Describe types and uses of hand and power tools
 11. Discuss safety principles and practices for portable electrical equipment
 12. Identify power supply capacity and limitations
 13. Describe light deployment methods
 14. Describe types of cleaning methods for various tools and equipment
 - Ladders
 - Ventilation equipment
 - SCBAs
 - Ropes
 - Salvage equipment
 - Hand tools
 15. Discuss the correct use of cleaning solvents
 16. Identify manufacturer or Department guidelines for cleaning equipment and tools, and removal from service
- Unit 5:
1. Describe common building materials and construction types
 2. Identify the effects of each construction type and elapsed time under fire conditions on structural integrity
 3. Identify dangerous building conditions created by fire
 4. Describe basic construction of typical doors, windows, walls, and roofs in your response area
 5. List physical states of matter in which fuels are found
 6. Describe the stages of fire
 7. Describe the classifications of fire
 8. Describe the methods of heat transfer
 9. Describe the relationship of oxygen concentration to life safety and fire growth
 10. Describe fire behavior in a structure
 - Energy efficient buildings
 - High-rise structures
 - Below grade structures
 - Wind-driven environments
 11. Describe the principles of thermal layering within a structure fire
 12. List the products of combustion found in a structure fire
 13. Identify the signs, causes, effects, and prevention of backdraft/smoke explosion
 14. Identify the signs, causes, effects, and prevention of flashover
 15. Identify the signs, causes, effects, and prevention of a BLEVE
 16. Identify the types of, rating systems for, and risks associated with, each class of fire extinguisher
 17. Discuss the operating methods and limitations of portable extinguishers
 18. Describe types and components of municipal and rural water systems
 19. Discuss loading and off-loading procedures for a mobile water supply apparatus
 20. Describe fire hydrant operations
 21. Identify suitable static water supply sources
 22. Describe procedures and protocols for connecting to various water sources
 23. Identify the principles of fire streams
 24. Describe different types, designs, operation, pressure effects, and flow capabilities of nozzles
 25. Identify types, designs, and uses of fire hoses
 26. Identify fittings, tools, and appliances
 27. Describe the application of each size and type of attack line
 28. Describe types of hose rolls, loads, and deployments
 29. Describe departmental procedures for inspecting a hose according to the manufacturer's guidelines, noting any defects, and removing it from service
 30. Discuss cleaning and maintenance methods
 - Hose
 - Nozzles
 - Appliances
 31. Identify precautions to be followed when advancing hose lines to a fire
 32. Describe observable results that a fire stream has been properly applied
 33. Describe properties and principles of, and safety concerns for, electrical systems
 - Primary electrical service
 - Secondary electrical service
 - Alternative energy services
 34. Describe properties and principles of, and safety concerns for, gas systems
 35. Describe properties and principles of, and safety concerns for, water systems
 36. Identify utility disconnect methods
 37. Outline associated dangers with utility disconnect methods
 38. Describe use of required safety equipment
 39. Identify the types, parts, and construction features of ground ladders
 40. Identify the uses of ground ladders
 41. Identify types of lifts and carries
 - High shoulder – Single firefighter
 42. Describe methods used to secure ground ladders
 43. Describe proper climbing techniques
 44. Describe safety limits to the degree of angulation
 45. Identify different angles for various tasks
 46. Describe methods to safely work off ground ladders
 47. Describe the hazards associated with setting up ladders
 48. Define what constitutes a stable foundation for ladder placement
 49. Describe what constitutes a reliable structural component for top placement
 50. Describe basic construction of typical doors, windows, and walls within your response area
 - Residential
 - Commercial
 51. Describe types and uses of hand and power tools used in forcible entry
 52. Describe operation of doors, windows, and locks
 53. Identify the dangers associated with forcing entry through doors, windows, and walls
 54. Define primary and secondary search techniques

55. Describe the use of thermal imaging cameras and other tools
 56. Identify team members' roles and goals in search and rescue operations within a structure
 57. Identify considerations related to respiratory protection
 58. Describe methods to determine if an area is tenable
 59. Define methods to use and indicators of finding victims
 60. Identify psychological effects of operating in obscured conditions and ways to manage them
 61. Describe the use of forcible entry tools during rescue operations
 62. Identify precautions to be followed when advancing hose lines to a fire
 63. Identify principles of exposure protection
 - Exterior
 - Interior
 64. Define the role of the backup team, "Two-in Two-out", in fire attack situations
 65. Describe attack and control techniques for below, at, and above grade level fires
 66. Identify methods for locating and exposing hidden fires
 67. Describe the principles, advantages, limitations, and effects of horizontal ventilation
 - Natural
 - Mechanical
 - Hydraulic
 68. Describe safety considerations when venting a structure
 69. Describe the principles, advantages, limitations, and effects of vertical ventilation
 70. List the techniques and safety precautions for venting flat roofs, pitched roofs, and basements
 71. Identify the effects of construction type and elapsed time under fire conditions on structural integrity
 72. Describe basic indicators of potential collapse or roof failure
 73. Describe the advantages and disadvantages of vertical and trench/strip ventilation
 74. Discuss the purpose of property conservation and its value to the public
 75. Describe methods used to protect property
 76. List types of and uses for salvage covers
 77. Describe operations at properties protected with automatic sprinklers
 78. Discuss how to stop the flow of water from an automatic sprinkler head
 79. Identify the main control valve on an automatic sprinkler system
 80. Describe procedures for protecting possible areas of origin and potential evidence
 81. Describe forcible entry issues related to salvage
 82. Describe the purposes and methods of overhaul
 83. Describe the types of fire attack lines and water application devices most effective for overhaul
 84. Discuss water application methods for extinguishment that limit water damage
 85. Identify types of tools and methods used to expose hidden fire
 - Senses
 - Hand and power tools
 - Thermal imaging cameras
 86. Discuss dangers associated with overhaul
 - Air monitoring
 - Need for respiratory protection
 87. Identify reasons for protecting a fire scene
 88. Describe obvious signs of area of origin, cause, or arson
 89. List techniques for the preservation of fire cause evidence
- Unit 6:
1. Identify different personnel accountability systems
 2. Identify the development of firefighter survival attitudes
 3. Identify emergency communication procedures
 4. Identify emergency procedures for loss of air supply
 5. Initiate an emergency call in accordance with the AHJ's procedures
 6. Use other methods of emergency calls for assistance
 7. Describe emergency evacuation methods for firefighter survival
 8. Define what constitutes a safe haven
 9. Identify elements that create or indicate a hazard
- Unit 7:
1. Discuss types of exterior fires
 2. Describe the types of attack lines and water streams appropriate for attacking stacked, piled materials, and outdoor fires
 3. Identify water application methods for exposure protection and fire extinguishment
 4. Identify dangers, such as collapse, associated with stacked and piled materials
 5. Describe various extinguishing agents and their effect on different material configurations
 6. Identify tools and methods used in breaking up various types of materials
 7. Describe the difficulties related to complete extinguishment of stacked and piled materials
 8. Describe dangers such as exposure to toxic or hazardous materials associated with storage building and container fires
 9. Recognize inherent hazards related to the material's configuration
 10. Describe principles of fire streams as they relate to fighting passenger vehicle fires
 11. Identify precautions to be followed when advancing hose lines toward a passenger vehicle
 12. List observable results that a fire stream has been properly applied
 13. Identify the hazards associated with alternative fuels in passenger vehicle fires
 14. Describe dangerous conditions created during a passenger vehicle fire
 15. Describe common types of accidents or injuries related to fighting passenger vehicle fires and how to avoid them
 16. Describe how to access locked passenger, trunk, and engine compartments
 17. Identify methods for overhauling a passenger vehicle
 18. Identify passenger vehicle fuel types
- Unit 8:
1. Identify equipment requirements
 2. Discuss agency time standards
 3. Identify special transportation considerations (weight limitations)
 4. Discuss agency safety response guidelines
 5. Describe operational procedures for various transportation modes
 6. Describe the use and limitations of required wildland personal protective clothing
 7. Describe the use, limitations, inspection, and care of New Generation Fire Shelter
 8. Describe the inspection of wildland personal protective clothing
 9. Describe maintenance of wildland personal protective clothing
 10. Discuss agency policy on fire shelter use
 11. Identify wildland fire fighting tools and equipment
 12. Describe uses for wildland fire fighting tools and equipment
 13. Describe the inspection of tools
 14. Describe the maintenance and care of tools and equipment
 15. Describe the inspection of assigned suppression equipment
 16. Identify parts of a wildland fire
 17. Describe basic wildland fire behavior
 18. Describe basic wildland fire safety
 - 10 Standard Fire Orders

- 18 Watch Out Situations
 - Lookouts, Communicates, Escape Routes, Safety Zones (LCES)
 - Common Denominators
 - Downhill line construction
 - Avoiding fire entrapment
 - Using a vehicle or a structure as refuge
 - 19. Describe hazards associated with working around aircraft
 - 20. Describe hazards associated with working around heavy equipment
 - 21. Describe basic verbal communications
 - 22. Describe basic wildland strategy and tactics
 - 23. Describe basic wildland suppression methods
 - Hose lays
 - Line construction
 - # Handline
 - # Dozer line
 - # Retardant
 - 24. Describe line improvement techniques
 - 25. Identify safety considerations when burning out
 - 26. Describe the types of basic ignition devices
 - 27. Describe wildland fire behavior within the wildland urban interface
 - 28. Describe wildland fuel removal for structure preparation
 - 29. Identify structure defense methods
 - 30. Identify equipment and personnel capabilities within the wildland urban interface
 - 31. Describe principles, techniques, and standards for mop-up
 - Dry mop-up
 - Wet mop-up
 - 32. Describe the principles, techniques, and standards of patrol
 - 33. List and describe the capabilities and uses of wildland firefighting aircraft
 - 34. Identify ICS types of aircraft, fixed wing and rotary wing
 - 35. Identify air base locations and average response times
 - 36. Describe safety precautions around aircraft
- Unit 9:
1. Identify capabilities and limitations of personal protective equipment provided by the AHJ
 2. Identify ways that people, personal protective equipment, apparatus, tools, and equipment become contaminated
 3. Explain the emergency, mass and technical decontamination process, according to AHJ
 4. Explain the importance and limitations of emergency decontamination procedures
 5. Describe standard operating procedures for emergency decontamination
- Laboratory:
- Unit 2:
1. Don structural personal protective ensemble
 2. Doff structural personal protective ensemble and prepare for reuse
 3. Inspect Structural Personal Protective Equipment in accordance with NFPA 1851
 4. Demonstrate different controlled breathing techniques
 5. Replace self-contained breathing apparatus air cylinders
 6. Use a self-contained breathing apparatus to exit through restricted passages
 7. Initiate and complete emergency procedures in the event of a self-contained breathing apparatus failure or air depletion
 8. Perform operational inspection for a self-contained breathing apparatus
 9. Demonstrate donning procedures to include: Coat, Over the head and seat mounted
 10. Demonstrate use of Hearing protection, seat belts and safety gates
 11. Demonstrate the use of chock blocks
 12. Deploy traffic and scene control devices
 13. Demonstrate how to dismount an apparatus
 - 14 Operate in protected work areas as directed
 15. Demonstrate proper hand signals for backing up fire apparatus
- Unit 3:
1. Operate fire station telephone and intercom equipment
 2. Operate fire station communications equipment
 3. Demonstrate how to record and relay information
 4. Operate fire department radios and equipment
- Unit 4:
1. Demonstrate how to tie the Overhand, half hitch, clove hitch, beckett bend, bowline figure 8, figure 8 on a bight, figure 8 follow through, water and handcuff knots
 2. Demonstrate how to hoist tools and equipment
 3. Demonstrate how to operate hand and power tools
 4. Demonstrate how to maintain tools
 6. Operate department power supply and lighting equipment
 7. Deploy cords and connectors
 8. Reset ground-fault interrupter (GFI) devices
 9. Locate lights for best effect
 10. Demonstrate how to select correct tools to maintain various parts and pieces of equipment
 11. Complete recording and reporting procedures
- Unit 5:
1. Operate portable fire extinguishers
 - Stored water pressure
 2. Select an appropriate extinguisher based on the size and type of fire
 3. Safely carry portable fire extinguishers
 4. Approach fire with portable fire extinguishers
 5. Deploy portable water tanks and the equipment necessary to transfer between and draft from them
 6. Fully open and close the hydrant
 7. Open, close, and adjust nozzle flow and patterns
 8. Prevent water hammer when shutting down nozzles
 9. Couple and uncouple various handline connections
 - Coupling hose – One firefighter foot tilt method
 - Coupling hose – Two firefighters
 - Uncoupling hose – Knee press
 - Uncoupling hose – Two firefighter stiff-arm
 10. Roll hose
 - Single roll
 - Donut roll
 - Twin donut roll
 - Self-locking twin donut roll
 11. Carry hose
 - Deploy minuteman load
 - Deploy triple fold
 - Deploy pre-connected flat load
 - Deploy working line drag method
 - Deploy shoulder load method
 - Deploy hose bundle
 12. Reload hose
 - Flat load
 - Minuteman load
 - Triple fold
 - Accordion
 - Horseshoe
 - Hose bundles
 13. Replace burst hose sections
 14. Hand lay a supply line
 15. Connect a supply hose to a hydrant
 16. Make hydrant-to-engine hose connections for forward lays

17. Connect and place hard suction hose for drafting operations
18. Clean different types of hose
19. Operate hose washing and drying equipment
20. Replace coupling gaskets
21. Mark defective hose
22. Identify utility control devices
23. Operate control valves or switches
24. Assess for related hazards
25. Tie off a halyard
26. Lift and carry ladders
 - High shoulder – Single firefighter
27. Raise and move ladders
 - Beam raise – Single firefighter
28. Extend and lock flies
29. Demonstrate proper climbing techniques
30. Demonstrate proper methods to safely work off ground ladders
31. Demonstrate leg lock method
32. Secure ground ladders
33. Determine that a wall and roof will support the ladder
34. Judge extension ladder height requirements
35. Place the ladder to avoid obvious hazards
36. Use a self-contained breathing apparatus to exit through restricted passages
37. Demonstrate a primary and secondary search
38. Apply water using direct, indirect, and combination attacks
39. Select, carry, deploy and secure ground ladders for ventilation activities
40. Carry ventilation related tools and equipment while ascending and descending ladders
41. Hoist ventilation tools to a roof
42. Sound a roof for integrity
43. Cut roofing and flooring materials to vent flat roofs, pitched roofs, and basements and retreat from the area as a team when ventilation is accomplished
44. Demonstrate how to cluster furniture
45. Deploy covering materials
46. Roll and fold salvage covers for reuse

Unit 6:

1. Demonstrate emergency evacuation methods for firefighter survival
- 2 Use a self-contained breathing apparatus to exit through restricted passages
3. Initiate and complete emergency procedures in the event of self-contained breathing apparatus failure or air depletion
4. Operate as a team member in vision-obscured conditions
4. Locate and follow a guide line
5. Evaluate areas for hazards
6. Identify a safe haven

Unit 7:

1. Operate handlines or master streams
 - One firefighter method (operating a large hand line)
 - Two firefighter method (operating a large hand line)
2. Assess and control fuel leaks

Unit 8:

1. Demonstrate the ability to don wildland personal protective ensemble
2. Demonstrate the ability to deploy New Generation Fire Shelter
 - Standing to sitting method
 - Standing drop-down method
 - Lying down method
3. Demonstrate proper cleaning procedures for wildland personal protective clothing
4. Recognize unserviceable items among wildland personal protective clothing

5. Recognize unserviceable items
6. Perform required maintenance techniques
7. Sharpen assigned suppression equipment
8. Perform other maintenance techniques for assigned suppression equipment
9. Use required maintenance equipment
10. Assemble and use a back pump
11. Assume safe position for an air tanker drop
12. Use fireline flagging
13. Use the Incident Response Pocket Guide (IRPG)
14. Use and carry wildland tools
 - Brush hook
 - Pulaski
 - Single and double bit axe
 - Round point shovel
 - McLeod
 - Wire broom
 - Rhino tool
 - Combi tool
 - Procedures for passing hand tools
15. Construct handline
 - Build a control line using the bump up or one lick method
 - Build a cup or trench while constructing handline
16. Perform mobile attack
17. Perform a simple hose lay
 - Single person
18. Perform progressive hose lay
 - Two-person minimum
19. Retrieve hose
 - Single-section drain and carry
 - Figure 8 drain and carry
20. Use basic ignition devices
 - How to ignite and extinguish road flares and fuses
 - How to assemble and use a drip torch
21. Prepare a structure for structure defense
22. Conduct structure defense within the wildland urban interface
23. Use basic tools to perform mop-up operations
24. Use basic techniques to perform mop-up operations

Unit 9:

1. Prepare an emergency, mass and technical decontamination area
2. Perform emergency mass and technical decontamination

General Education Information

- Approved College Associate Degree GE Applicability
- CSU GE Applicability (Recommended-requires CSU approval)
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

Articulation Information

- Not Transferable

Methods of Evaluation

- Objective Examinations
 - Example: Student will take a multiple-choice examination on fire behavior. Example: How many sides are there to the fire triangle?
A. 1 B. 2 C. 3 D. 4
- Skill Demonstrations

- Example: Students will be evaluated on how to properly don self-contained breathing apparatus. Grade based on industry standard - Pass/Fail.

Repeatable

No

Methods of Instruction

- Laboratory
- Lecture/Discussion

Lab:

1. Instructor demonstration and lecture on how to properly perform a progressive hose lay, followed by student demonstration on how to perform the hose lay.

Lecture:

1. Instructor provided lecture on identifying parts of a wildland fire, followed by students correctly naming all parts on an instructor provided handout.

Typical Out of Class Assignments

Reading Assignments

1. Read Wildland 18 situation that "shout watch" out from your textbook and be prepared to recite in class.
2. Read modes of attach from your textbook and be prepared to discuss in class.

Writing, Problem Solving or Performance

1. Students will be given a woodland scenario from the instructor and students are to report how they would assess the fire and make an initial attack.
2. Students will write a report on a woodland firefighter line of duty death and present to class.

Other (Term projects, research papers, portfolios, etc.)

Required Materials

- Fundamentals of Firefighter Skills
 - Author: International Association of Fire Chiefs and NFPA
 - Publisher: Jones and Bartlett Learning
 - Publication Date: 2019
 - Text Edition: 4th
 - Classic Textbook?:
 - OER Link:
 - OER:

Other materials and-or supplies required of students that contribute to the cost of the course.

Instructor provided material