

Las Positas College  
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### Course Outline for FST 86A

### CAL FIRE BASIC FIREFIGHTER

Effective: Spring 2019

#### I. CATALOG DESCRIPTION:

FST 86A — CAL FIRE BASIC FIREFIGHTER — 5.00 units

A basic structural and wildland firefighting course oriented toward entry-level employment in agencies responsible for Wildland Fire Mitigation and interface I-Zone Fire Protection. Emphasis on equipment utilized on CAL FIRE Engines (formerly California Department of Forestry). Meets minimum requirements for seasonal employment with CAL Fire. Course emphasizes demonstration, student application and performance examinations. Fundamentals of wildland fire control and techniques of controlling other emergency incidents covered with a strong safety perspective. Various live fire exercises for application of fire control and suppression techniques. Provides for S130, S131 and S190 equivalency under National Wildfire Coordinating Group (NWCG). Students completing this course, the prerequisite courses, and the CAL Fire "Firefighter Basic Training" Taskbook course meet the 2010 CAL Fire 179 Hour "CAL FIRE Basic Firefighter" certification requirements. Course complies with the State Board of Fire Services Wildland Fire Fighting requirements for Structural Firefighter I Certification.

3.00 Units Lecture 2.00 Units Lab

#### Prerequisite

FST 11C - Firefighter I Academy - Capstone Testing  
with a minimum grade of C

#### Grading Methods:

Letter Grade

#### Discipline:

- Fire Technology

	<b>MIN</b>
<b>Lecture Hours:</b>	54.00
<b>Lab Hours:</b>	108.00
<b>Total Hours:</b>	162.00

#### II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

#### III. PREREQUISITE AND/OR ADVISORY SKILLS:

**Before entering the course a student should be able to:**

- A. FST11C

#### IV. MEASURABLE OBJECTIVES:

**Upon completion of this course, the student should be able to:**

- Describe the factors that influence wildland fire protection in California
- Explain the mission, organization, and the code of conduct requirements for wildland fire operations
- define basic Incident Command System (ICS) terminology, structure and facilities;
- describe logistical support operations under the state mutual aid system for access to local state and federal wildland fire resources;
- describe the station operations and firefighter preparedness for response to an emergency call;
- explain the physics and the fire chemistry of wildland fire behavior;
- identify and describe the extinguishing agents and application methods for various fire situations;
- describe and demonstrate the proper method for donning wildland personal protective equipment (PPE) Structural and Wildland, including self-contained breathing apparatus (SCBA);
- describe and demonstrate wildland firefighter safety principles;
- Identify and describe the characteristics and function of each type of wildland fire apparatus
- Identify and describe fire operations and safety issues with firefighting aircraft and mobile ground equipment;
- describe and demonstrate proper utilization of wildland hand tools, power tools, and equipment;
- demonstrate deployment of 16-foot and 20-foot ground ladders;
- demonstrate loading and deployment methods for wildland fire hose, appliances and tools;
- identify and describe vegetation suppression strategies;
- describe and demonstrate proper shelter deployment;
- Identify and describe structural suppression strategies;
- Identify and describe suppression strategies for vehicle fires and boiling liquid expanding vapor explosions (BLEVE);

- S. identify and describe fire suppression challenges involving the wildland/urban interface;
- T. apply suppression techniques following all required safety practices under simulated and live fire conditions;
- U. demonstrate loading and deployment methods for structural fire hose, appliances and tools;
- V. demonstrate proper structure search and rescue safety precautions;
- W. describe proper structure protection and structure fire extinguishment techniques and tactics;
- X. identify different types of building construction;
- Y. describe indicators of potential building collapse;
- A@. Describe safety precautions when working around energized equipment

## V. CONTENT:

### A. Lecture

1. Wildland fire protection organization in California
  - a. Wildland values and functions
  - b. organization of wildland protection
  - c. Fire terminology
  - d. The fire problem in California - recent incident studies
  - e. Functions of the protection organization
    1. The fire prevention problem
    2. Fire prevention planning
    3. Pre-suppression planning
  - f. Fire organization
    1. Planning
    2. Fire line
    3. Support
2. California Department of Forestry and Fire Protection (CAL FIRE) Mission and organization, culture of CAL FIRE
  - a. Code of Conduct
  - b. Working with California inmate fire crews
  - c. Introduction to Radio communications
3. Incident Command System (ICS)
  - a. ICS terminology and structure
  - b. Resource types by ICS classification
  - c. ICS facilities
    1. Incident command post
    2. Staging areas
    3. Incident base
    4. Camps
    5. Helibases and helisports
4. Logistical support
  - a. State and Federal agencies
  - b. Local, state and federal mutual aid
5. Response preparedness
  - a. Station operations
  - b. Wildland firefighter preparedness
  - c. Responding to an emergency call
6. Fire behavior
  - a. Chemistry
  - b. Fuel
  - c. Weather
  - d. Topography
7. Extinguishing agents and application methods
  - a. Water
  - b. Foam, class "A" and class "B"
  - c. Fire Blocking Gels
  - d. Chemicals
  - e. CO2
  - f. Dirt
8. Personal protective equipment (PPE)
  - a. Wildland fire PPE
  - b. Structural fire PPE
  - c. Self-contained breathing apparatus (SCBA)
    1. Types
    2. Components
  - d. Personal Alert Safety System (PASS)
9. Firefighter safety
  - a. Line organization
  - b. Personal needs
  - c. Medical concerns
  - d. Hydration
  - e. Snake bites and stings
  - f. Burns
  - g. Strains, Sprains
  - h. Heat exhaustion, heat stroke
  - i. Communications
  - j. LACES
    1. Lookouts
    2. Awareness
    3. Communication(s)
    4. escape route(s)
    5. Safety zone(s)
  - k. 18 Watchouts
  - l. Ten Standard Fire Orders
  - m. Rapid Intervention Crews and Firefighter Survival
  - n. Fireline hazards
  - o. Structural hazards
  - p. Avoiding fire entrapment
  - q. Common denominators of fire fatalities
  - r. Chainsaw safety
  - s. Personal physical conditioning and strength
    1. Importance of types of stretching and warm-up exercises

- 2. Requirements of Pack Test
- 10. Apparatus types and capabilities
  - a. Federal and California classifications
  - b. Air operations, types of aircraft and facilities
    - 1. Fixed wing
    - 2. Rotary wing
  - c. Mobile ground apparatus
    - 1. Structure engine
    - 2. Brush truck
    - 3. Mobile water shuttle
    - 4. CAL Fire apparatus types
  - d. Heavy equipment
    - 1. Dozers
    - 2. Tenders
    - 3. Fire Blocking Gel Trucks
- 11. Apparatus safety
  - a. Safety considerations when working around dozers
  - b. Safety considerations when working near aircraft
- 12. CAL Fire Wildland Firefighter Safety and Survival Level I
- 13. Wildland Equipment
  - a. Hand and power tools
  - b. Fire extinguishers
  - c. Communication
  - d. traffic control devices and signals
  - e. Records
  - f. Backfiring equipment
    - 1. Drip torch
    - 2. Back pumps
    - 3. Fusees
    - 4. Flare launcher (gun)
    - 5. Hand thrown flares
    - 6. Terra torch
  - g. Maps
    - 1. Map reading
    - 2. GPS
    - 3. Compass utilization
- 14. Ground ladders
  - a. Terminology
  - b. Safety practices
- 15. Fire Hose, appliances and tools
  - a. Terminology
  - b. Types of loads and lays
  - c. Types of nozzles
- 16. Vegetation fires
  - a. Wildland firefighting terminology
  - b. Parts of a wildland fire
  - c. Wildland fire strategy
    - 1. Response
    - 2. Size-up
    - 3. Rescue
    - 4. Exposure
    - 5. Cutting line
  - d. Attack methods
    - 1. Progressive hose lays
    - 2. Mobile attack operations
    - 3. Handline construction
  - e. Mop-up and patrol
- 17. Structural fires
  - a. Effects of structure endangered
  - b. Strategies
  - c. Tactics
  - d. Two in - two out rule
  - e. Confinement
  - f. Extinguishment
  - g. Overhaul
  - h. Salvage
  - i. Basic Building Construction Types
  - j. Building collapse indicators
  - k. Rapid Intervention Crew
  - l. Breaching and cutting tools
- 18. Special fires
  - a. Vehicle fires
  - b. Boiling Liquid Expanding Vapor Explosion (BLEVE), propane vessels
  - c. Response strategies
- 19. Urban interface hazards
  - a. Triage of structures
  - b. Safety considerations
  - c. Structure protection guidelines
  - d. Basic forcible entry techniques
  - e. Fire shelters
  - f. Characteristics and functions (new generation)
  - g. Shelter deployment
- B. Laboratory
  - 1. Personal protective equipment
    - a. Don wildland fire PPE
    - b. Don/Doff SCBA (MSA Firehawk Stealth with PASS)
      - 1. Coat method
      - 2. Seat-mount method
      - 3. Over-the-head method
    - c. Demonstrate inspection, cleaning and sanitizing SCBA

- d. Utilize SCBA under physical exertion (stair climb)
- e. Utilize SCBA during performance of search techniques and structural firefighting applications
- 2. Firefighter safety
  - a. Perform daily PT and physical fitness training
    - 1. Stretching and warm-up exercises
    - 2. Conditioning run 1 to 2 miles
  - b. Perform pack test, 45 lb vest, 3 minutes in 45 minutes (walking only)
  - c. Deploy a canister style fire blanket
  - d. Demonstrate how to use a one-person side pull fire curtain
  - e. Demonstrate how to use the one piece roll down fire curtain
  - f. Demonstrate how to use the two piece fire curtain
  - g. Deploy fire shelter within the cab
  - h. Deploy the new generation fire shelter - standing, sitting, lying down, exiting a cab
  - i. Perform shelter deployments in both static and dynamic conditions
  - j. Demonstrate how to assume the safety position for an air tanker or rotary aircraft drop
- 3. Tools and equipment for Wildland and Structure Firefighting
  - a. Operate and maintain chain saw
  - b. Operate a back pump (pump pack)
  - c. Operate a floto pump
  - d. Utilize, maintain assorted wildland hand tools
    - 1. Shovels, round tip, square point, scoop
    - 2. Mcleod
    - 3. Polaski
    - 4. Brush hook
    - 5. Fire swatter
    - 6. Fire rake
    - 7. Wire broom
    - 8. Rhino tool
    - 9. Combi tool
    - 10. Axes, single bit, double bit, pick-head
  - e. Cut line in brush, grass, includes cup trench techniques, perform downhill fireline construction
  - f. Utilize maintain forcible entry tools
    - 1. Halligan bar
    - 2. Chicago door opener
    - 3. Flathead axe
    - 4. 6 lb sledge hammer
- 4. Fire Hose, appliances and tools
  - a. Demonstrate hose coupling
    - 1. Over the hip single person
    - 2. Two person
    - 3. Tight coupling-knee press, single person
    - 4. Tight coupling-stiff arm, two person
  - b. Bed and deploy a triple layer 2 1/2" hose load
  - c. Demonstrate various hose rolls; straight-in service and out of service, donut, twin donut, and use of commercial hose roller
  - d. Demonstrate basic flat load and accordion load for hose
  - e. Advance a progressive hoselay
    - 1. Three person method
    - 2. One method (300 feet) method
  - f. Carry hose from hose bed - one shoulder carry method
  - g. Pick up and drain hose
    - 1. Accordion should carry method - one person
    - 2. Butterfly method - one person
  - h. Structure protection pre-connected hose loads and deployment 1 3/4" hose, minuteman load and standard flat load
  - i. Identify and use basic hose, couplings, and related hose adaptors and appliances
  - j. Perform maintenance for hose, couplings, and related tools and appliances for hose lines
- 5. Mobile equipment
  - a. Demonstrate backing hand signals
  - b. Demonstrate use of floto-pumps and make hydrant connections, identify water resources
- 6. Ground ladders
  - a. Carry, raise, extend, and place the 16-foot (single person) and 24-foot (2 person) ladder to a structure
  - b. Retract, lower, and return the 16-foot (single person) and 24-foot (2 person) ladder to the apparatus
- 7. Specialized Equipment
  - a. Demonstration and orientation to Water Tenders, Thitack Operations, Dozers
  - b. Observe Bambi Bucket deployment
- 8. Vegetation live fire exercises
  - a. Perform a mobile fire attack; Flanking, Parallel, Tandem, Pincer, Bump and Run
  - b. Demonstrate mop-up and patrol
  - c. Perform attack methods with hand tools and pump packs
  - d. Perform progressive hose lay operations
  - e. Perform line and strip firing
- 9. Live fire exercises (non vegetation)
  - a. Utilize portable fire extinguishers, CO2, dry-chem (multi-purpose), water with burn pan
  - b. Ignite and extinguish signaling flares (road flares), wildland fuses
  - c. Ignite and utilize a drop torch.

## VI. METHODS OF INSTRUCTION:

- A. Group discussion
- B. Audiovisual aids
- C. Practical field application
- D. Manipulative drills
- E. Reading assignments
- F. Performance examinations
- G. Simulated problem solving
- H. **Lecture** -
  - I. Incident action planning
  - J. Controlled live fire exercises

## VII. TYPICAL ASSIGNMENTS:

- A. Complete the following on-line courses: S-110 "Basic Wildland Suppression Orientation: (2003), S-130 "Firefighter Training" (S003), and the S-190 "Introduction to Wildland Fire Behavior" (2006) through NWCG Training.
- B. Develop wildland interface scenario through oral evaluation during lab assignments and describe the procedures towards conducting size up, containment, extinguishment and overhaul.
- C. Demonstrate in field exercises the proper use of tools and equipment.
- D. Demonstrate proper use of Safety Equipment under various exercises, identifying escape routes, safety zones, and demonstrating proper shelter deployment techniques.
- E. Demonstrate proper extinguishment methods using available means and equipments under controlled live fire applications.
- F. Read assignments of course text and review of course handouts and classroom notes.
- G. Maintain Task Book assigned, in which all components of all required manipulative-psychomotor skills, and cognitive knowledge instruction will be recorded as successfully completed during all lecture and lab sessions of training.

#### VIII. EVALUATION:

##### A. **Methods**

- 1. Other:
  - a. Satisfactory completion of CAL Fire Basic Firefighter Taskbook
  - b. Quizzes (written and oral)
  - c. Successful completion of all manipulative performance standards
  - d. Final state written examination

##### B. **Frequency**

- 1. CAL FIRE Basic Firefighter Taskbook - ongoing assessment during lecture and lab sections of course delivery
- 2. Daily Quizzes
- 3. Specific skills performance tests (psychomotor testing) at end of course
- 4. Final state written exam on last day of class

#### IX. TYPICAL TEXTS:

- 1. Lowe, J. (2001). *Wildland Fire Fighting Practice*. : Delmar.
- 2. Wildland Fire Fighting for Structural Firefighters, IFSTA 4th Edition (2003)
- 3. Essentials of Fire Fighting and Fire Department Operations. IFSTA 5th Edition, Brady, 2008
- 4. Fireline Handbook, National Wildfire Coordinating Groups, 2004

#### X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. Wildland firefighting gloves, NFPA and ANSI Approved
- B. Wildland firefighting boots, NFPA and ANSI Approved
- C. Uniform Pant, Black 100% Cotton or Nomex
- D. Black Leather (Basket Weave) 1 3/4", Belt with Silver Buckle
- E. LPC FST T-Shirt and LPC FST Ball Cap