

Las Positas College  
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## Course Outline for FST 10

### FIREFIGHTER I ACADEMY - INTRODUCTION

Effective: Spring 2019

#### I. CATALOG DESCRIPTION:

FST 10 — FIREFIGHTER I ACADEMY - INTRODUCTION — 1.00 units

This course provides an orientation to the Fire Fighter I Academy and introduces the applied operations and maintenance of basic rescue and fire suppression apparatus and equipment. Topics include radio communications, ropes, ladders, hose, personal protective equipment, tool operations, maintenance, and physical fitness training. This course is required for students preparing to apply to the Fire Fighter I Academy at Las Positas College.

0.50 Units Lecture 0.50 Units Lab

#### Grading Methods:

Pass/No Pass

#### Discipline:

- Fire Technology

	<u>MIN</u>
<b>Lecture Hours:</b>	9.00
<b>Expected Outside of Class Hours:</b>	18.00
<b>Lab Hours:</b>	27.00
<b>Total Hours:</b>	54.00

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

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

#### IV. MEASURABLE OBJECTIVES:

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

- Identify the different levels of certification in the Fire Fighter I certification track, the courses and requirements for Fire Fighter I certification, and be able to describe the capstone task book and testing process.
- Calculate fire service mathematic equations to solve for safe working load, mechanical advantage, and fire stream hydraulic problems.
- Don a structural personal protection ensemble including self-contained breathing apparatus (SCBA).
- Operate a portable radio and transmit clear and concise emergency scene messages following standard communication procedures.
- Produce a variety of introductory-level hitches and knots using rope and a web strap.
- Demonstrate safe transport, operation, and maintenance of various hand power tools.
- Demonstrate strength, endurance, coordination, and stamina necessary to perform ladder lift, carry, raise, extension, and lowering techniques under supervision, following all safety procedures.
- Demonstrate strength, endurance, coordination, and stamina necessary to perform basic hose lays, and advance charged hose line at a beginning level of proficiency.
- Demonstrate strength, endurance, coordination, and stamina necessary to manipulate basic fire suppression apparatus and equipment at a beginning level of proficiency.
- Demonstrate basic forcible entry techniques with hand tools to make entry through a window and a swinging door.
- Relate categories of physical fitness training to various kinds of manipulative tasks required of firefighters.
- Practice regular physical fitness activities including stretching, cardiovascular, and strength training using appropriate techniques.
- Complete the Fire Academy Physical Ability Test to the required performance standard.

#### V. CONTENT:

##### A. Lecture

- Orientation and Administration
  - Facility Requirements
  - Classroom Requirements
  - Equipment Destruction
- Fire Fighter I Certification Process
  - Levels of Certification
    - Fire Fighter I
    - Wildland Fire Fighter I
    - Awareness/Operations Level Responder: Hazardous Materials/Weapons of Mass Destruction Incidents

- b. Course Requirements
      - 1. Fire Fighter I
      - 2. Wildland Fire Fighter I
      - 3. Fire Responder Operations
      - 4. Confined Space Awareness
        - a. IS-100 Introduction to Incident Command Systems
        - b. IS - 700A National Incident Management Systems, An Introduction
    - c. Capstone Task Book Process
    - d. Capstone Testing Process
  - 3. Health and Safety
    - a. Common types of accidents or injuries and their causes
    - b. Importance of physical fitness and a healthy lifestyle to the performance and duties of a firefighter
    - c. Critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program
    - d. Value of fire and life safety initiatives in support of the fire department's mission to reduce firefighter line-of-duty injuries and fatalities
  - 4. Structural Personal Protective Ensemble
    - a. Components
    - b. Protection provided by ensemble
  - 5. Self-Contained Breathing Apparatus (SCBA)
    - a. Conditions requiring respiratory protection
    - b. Physical requirements of SCBA wearer
    - c. Components of SCBA
  - 6. Operating Fire Department Radios
    - a. Procedures and etiquette for radio traffic
    - b. Routine and emergency traffic
  - 7. Ropes and Knots
    - a. Types and uses of ropes and knots
    - b. Safe working load principles
    - c. Difference between life safety and utility rope
    - d. Parts of knots
  - 8. Maintenance
    - a. Cleaning methods for various tools and equipment
    - b. Recording and reporting procedures
  - 9. Water Supply Systems
    - a. Types and components of municipal water systems
    - b. Procedures and protocols for connecting to a fire hydrant
  - 10. Fire Hose
    - a. Principles of fire streams
    - b. Basic water flow hydraulic principles
    - c. Types of nozzles
    - d. Types, designs, and uses of fire hoses
    - e. Fittings, tools, and appliances to support
      - a. Hydrant and pump connections
      - b. Hose connections
    - f. Basic hose rolls, loads, and deployments
    - g. Basic inspection, cleaning, and maintenance guidelines
  - 11. Ground Ladder Operations
    - a. Types, parts, and construction features of ground ladders
    - b. Uses of ground ladders
    - c. Safety limits to the degree of angulation
    - d. Hazards associated with setting up ladders
  - 12. Forcible Entry
    - a. Basic construction of wood-framed swinging doors
    - b. Basic construction of double-hung windows
    - c. Types and uses of hand tools used in forcible entry
- B. Laboratory
  - 1. Health and Safety
    - a. Stretching
    - b. Cardiovascular training
    - c. Weight training
    - d. Relationship to common fire suppression manipulative tasks
  - 2. Don and doff structural personal protective ensemble
  - 3. Don and doff SCBA
  - 4. Operating fire department radios
    - a. Transmit a routine radio report
    - b. Transmit an emergency traffic report
  - 5. Ropes and Knots
    - a. Tie knots with a rope
      - 1. Overhand knot
      - 2. Square knot with two overhand safety knots
      - 3. Bowline around waist with an overhand knot
      - 4. Clove hitch with two half hitches on a tool
      - 5. Figure-8 knot
      - 6. Figure-8 follow through
      - 7. Figure-8 on a bight
      - 8. Directional Figure-8
      - 9. Modified truckers hitch
    - b. Tie knots with web strap
      - 1. Overhand bend (water knot)
      - 2. Cow hitch/lark's foot on hose with clove hitch to balcony railing
  - 6. Hose Operations
    - a. Connect hose to hydrant for forward hose lay
    - b. Connect hose to fire engine pump intake
    - c. Make-and-break attack hose couplings
    - d. Straight hose rolls
      - 1. In-service
      - 2. Out-of-service
    - e. Preconnected hose deployment
  - 7. Ground Ladder Operations
    - a. Raise and lower roof ladder

- b. Lift and pivot extension ladder from high shoulder carry to flat raise position
- c. Extend and retract fly section of extension ladder
- d. Lift, carry, raise, extend, place, and return 24-foot extension ladder
- 8. Forcible Entry
  - a. Force entry on an inward swinging door
  - b. Force entry on an outward swinging door
  - c. Force entry through a window
- 9. Complete Fire Academy Physical Ability Test

#### VI. METHODS OF INSTRUCTION:

- A. **Lecture** -
- B. **Audio-visual Activity** -
- C. **Observation and Demonstration** -
- D. **Discussion** -
- E. **Simulations** -

#### VII. TYPICAL ASSIGNMENTS:

- A. Calculate basic hydraulic formulas to determine fire streams
- B. Using rope to tie basic knots
- C. Don structural personal protective ensemble with SCBA for fire operations
- D. Hose deployment and connections
- E. Ladder operations
- F. Forcible entry operations
- G. Operate fire department radios

#### VIII. EVALUATION:

##### **Methods/Frequency**

- A. Exams/Tests
  - Summative exam at completion of course
- B. Quizzes
  - Daily quizzes on previous course material covered
- C. Simulation
  - Skill based evaluation on tools and equipment covered
- D. Class Participation
  - Daily participation mandatory
- E. Home Work
  - Reading, and skills based homework

#### IX. TYPICAL TEXTS:

1. Jones and Bartlett. *Fundamentals of Fire Fighter Skills*. 3rd ed., Jones and Bartlett Learning, 2017.
2. Tele, William. *Firefighters Handbook on Wildland Firefighting*. 3rd ed., Deer Valley Press, 2005.
3. IAFC and NFPA. *Hazardous Materials: Awareness and Operations*. 3rd ed., Jones and Bartlett, 2017.
4. Stowell, Frederick. *Essentials of Fire Fighting and Fire Department Operations*. 6th ed., IFSTA Brady, 2013.
5. Corbett, Glenn. *Fire Engineering's Handbook for Fire Fighter 1 and Fire Fighter 2*. 2013 ed., Pennwell, 2013.

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

- A. 1 - Drinking Water Bottle (8oz Clear Plastic)
- B. Dark navy blue t-shirt
- C. Navy blue uniform pant
- D. Black braided uniform belt
- E. Black polished steel toe work boot
- F. leather Work gloves