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**Course Outline for FST 73B**  
**FIRE PREVENTION OFFICER IB**  
**Effective: Spring 2018**

**I. CATALOG DESCRIPTION:**

FST 73B — FIRE PREVENTION OFFICER IB — 2.00 units

This course provides Fire Prevention Professionals with the base knowledge necessary to inspect fire protection systems and special hazards. The course is designed for Fire Prevention, Suppression, Public Education and Fire Investigation Personnel. This is a State of California Fire Marshal, State Fire Training, CFSTES (California State Fire Service Training and Education System) course approved by the California State Fire Board. A certificate will be issued upon successful completion of the course. The course satisfies one of the component requirements for the certification tracks of "Company Officer", "Fire Prevention Officer" and "Public Education Officer".

2.00 Units Lecture

**Prerequisite**

FST 73A - Fire Prevention Officer IA  
with a minimum grade of C

**Grading Methods:**

Letter Grade

**Discipline:**

- Fire Technology

	<b>MIN</b>
<b>Lecture Hours:</b>	36.00
<b>Expected Outside of Class Hours:</b>	72.00
<b>Total Hours:</b>	108.00

**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. FST73A

**IV. MEASURABLE OBJECTIVES:**

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

- A. Identify the classification, properties, labeling, incidental storage, handling, and use of flammable and combustible liquids and gases;
- B. Identify the classification, properties, labeling, incidental storage, handling, and use of hazardous materials, other than flammable and combustible liquids and gases;
- C. Explain the principles and operational readiness of portable fire extinguishers;
- D. Explain the principles and operational readiness of special fixed fire protection systems;
- E. Explain the principles and operational readiness of detection and alarm systems;
- F. Explain the principles and operational readiness of sprinkler systems and fire pumps;
- G. Explain the principles and operational readiness of standpipe systems.

**V. CONTENT:**

- A. Orientation and Administration
  1. Course Goals and Objectives
  2. CFSTES Certification Tracks
    - a. "Company Officer" Certification
    - b. "Fire Prevention Officer" Certification
- B. Flammable and Combustible Liquids Terms and Characteristics
- C. Acceptable Containers for Flammable and Combustible Liquids
  1. Approved and Listed Containers
  2. Limits for Portable Tanks and Containers
  3. Specialized "Approved" Containers
- D. Introduction to Material Safety Data Sheets
  1. "Employee Right To Know" Laws

- 2. MSDS Contents
- E. Inside Storage of Flammable and Combustible Liquids
  - 1. General Requirements
  - 2. Maximum Allowable Quantities
- F. Outside Storage of Flammable and Combustible Liquids
  - 1. General Requirements
  - 2. Location on Property
  - 3. Storage Adjacent to Buildings
  - 4. Spill Control and Secondary Containment
  - 5. Special Considerations
  - 6. Abandonment and Status of Tanks
- G. Dispensing, Using, Mixing, and Handling Flammable and Combustible Liquids
  - 1. Dangers of Dispensing and Transferring Flammable Liquids
  - 2. Housekeeping
  - 3. Special Considerations
  - 4. Transferring Class I, II, and III-A Liquids
  - 5. Using, Dispensing, and Mixing Inside of Buildings
  - 6. Using, Dispensing, and Mixing Outside of Buildings
- H. Properties of Compressed, Cryogenic, and Liquefied Gases
  - 1. Common Uses and Examples of Compressed and Liquefied Gases
- I. Fire Hazards of Compressed and Liquefied Gases
  - 1. Physical Properties
  - 2. Heat Sources
  - 3. Special Considerations
- J. Procedures for Inspecting Motor Vehicle Dispensing Stations
  - 1. General Issues
  - 2. Safety
  - 3. Maintenance
  - 4. Dispensing Stations
- K. Procedures for Inspecting LPG Occupancies
  - 1. General Issues
  - 2. Usage
  - 3. Location
  - 4. Storage Capacity
- L. Procedures for Inspecting Flammable Finish Application Occupancies
  - 1. General Issues
  - 2. Spray Finishing Locations
  - 3. Spray Booth
  - 4. Limited Spraying Areas
  - 5. Storage, Use and Handling of Flammable and Combustible Liquids
  - 6. Fire Protection for Spray Booths and Spraying Rooms
  - 7. Maintenance
  - 8. Dip Tanks
- M. Methods for Controlling Ignition Sources and Explosive Atmospheres
  - 1. Preventing Ignition
  - 2. Common Ignition Sources
  - 3. Methods to Prevent Formation of Explosive Mixtures
  - 4. Evaporation of Flammable and Combustible Liquids
- N. Hazardous Materials Terms and Characteristics
  - 1. References and Definitions
  - 2. Oxidizers
  - 3. Organic Peroxides
  - 4. Pyrophoric Materials
  - 5. Unstable (Reactive) Materials
  - 6. Cryogenic Fluids
  - 7. Health Hazards
  - 8. Radioactive Materials
  - 9. Corrosives
  - 10. Combustible Metals
  - 11. Plastics
  - 12. Combustible Dust / Fibers
- O. Sources of Technical Information on Hazardous Materials
  - 1. Public Agencies
  - 2. Private Organizations
  - 3. Other Sources
- P. Regulating Hazardous Materials
  - 1. Department of Transportation (DOT)
  - 2. Federal and State Law (CFR and CCR)
  - 3. California Fire Codes – Chapter 27
  - 4. Cal OSHA
  - 5. Prohibited Releases
- Q. Introduction to Hazardous Materials Management Plan
  - 1. HMMP – When Required
  - 2. HMMP Document
- R. Storage and Transfer Practices of Compressed and Liquefied Gases
  - 1. Installation and Use Guidelines
  - 2. Transfer of Product
  - 3. Control of Product Leakage
- S. Hazards of Explosives and Fireworks
  - 1. Regulating Fireworks
  - 2. Regulating Explosives
  - 3. Sources of Technical Information
- T. Storage of Hazardous Materials
  - 1. Hazardous Materials Storage Cabinets
  - 2. General Safety Precautions
- U. NFPA 704 Identification Systems
  - 1. NFPA 704 Application
- V. Classification by Hazard
  - 1. Hazard Categories
  - 2. Evaluation of Hazards

- W. Inspection of the Incidental Use, Handling, and Storage of Hazardous Materials
  - 1. Maximum Allowable Quantity
  - 2. Establishing Permitted and Exempt Amounts
  - 3. Field Methodology for Checking for Compliance (Red Flags)
- X. Portable Fire Extinguisher Classifications
  - 1. Types of Extinguishers
  - 2. Portable Fire Extinguisher Ratings
  - 3. Location of Extinguishers
- Y. Procedures for Inspecting Portable Fire Extinguishers
  - 1. Extinguishing Agents
- A@. Portable Fire Extinguisher Placement
  - 1. Legal Requirements
  - 2. Extinguisher Hazards and Spacing Requirements
  - 3. Extinguisher Readiness
  - 4. Maintenance Inspection
  - 5. Service Status Tags
  - 6. Hydrostatic Test Status
  - 7. Extinguisher Access
- AA. Fixed Fire Protection Systems
  - 1. Five Main Types
  - 2. System Configurations
  - 3. Foam Extinguishing Systems
  - 4. Carbon Dioxide Systems
  - 5. Halon/Clean Agent Systems
  - 6. Dry and Wet Chemical Systems
- AB. Procedures for Inspecting Fixed Fire Protection Systems
- AC. Procedures for Inspecting Commercial Cooking Equipment
  - 1. Kitchen Fire Protection Systems
  - 2. Inspecting Commercial Kitchens
- AD. Detection and Alarm Systems Terms and Characteristics
  - 1. Terminology and Definitions
- AE. Fire Alarm Systems Components
  - 1. Fire Alarm Control Panel
  - 2. Power Supply
  - 3. Initiating Devices
  - 4. Notification Devices
  - 5. Fire Alarm System Interfaces
- AF. Fire Alarm Signaling System Classifications
  - 1. Single Station Alarm
  - 2. Alarm Signaling Systems
- AG. Procedures for Inspecting Fire Alarm Systems
  - 1. Testing Requirements
  - 2. Maintenance Procedures
  - 3. Inspection
- AH. Requirements for Fire Alarm Systems
  - 1. Plans (Construction Documents)
  - 2. Installation Acceptance Testing
  - 3. Systems out of Service
  - 4. Obstructions or Impairment of Fire Alarm System
  - 5. Required Installations
- AI. Water-Based Fire Protection Systems Terms and Characteristics
  - 1. Terminology and Definitions
- AJ. Water Supply Systems
  - 1. System Components
  - 2. Types of Distribution Systems
  - 3. Distribution System Components
  - 4. Delivery Systems
  - 5. Private Water Supply System Readiness
  - 6. Common Reasons for Failure
- AK. Sprinkler System Benefits, Limitations and Design
  - 1. Overcoming System Limitations
- AL. Types of Sprinkler Systems
  - 1. Wet-Pipe
  - 2. Dry-Pipe
  - 3. Pre-Action
  - 4. Deluge
  - 5. Residential Occupancy Sprinkler Systems
- AM. Sprinkler System Components
  - 1. Sprinklers
  - 2. Pipes, Hangers and Seismic bracing
  - 3. Control Valves
  - 4. Operating Valves
  - 5. Fire Department Connection (FDC)
  - 6. Water Flow Alarms
  - 7. Supplemental System Components
- AN. Procedures for Inspecting Sprinkler Systems
  - 1. Sprinkler Heads
  - 2. Piping and Hangers
  - 3. Frequency of Inspections
  - 4. Inspecting a Wet-Pipe System
  - 5. Inspecting a Dry-Pipe System
  - 6. Inspecting Deluge and Pre-Action Systems
- AO. Procedures for Conducting Test on Wet-Pipe Sprinkler Systems
  - 1. Alarm Test
  - 2. Water Flow Alarm Test
  - 3. Main Drain Test
- AP. Procedures for Conducting Test on Dry-Pipe Sprinkler Systems
  - 1. Main Drain Test
  - 2. Trip Test
- AQ. Characteristics of Standpipe Systems

1. Standpipe System Classifications
  2. Methods of Operation (Types)
  3. Requirements for Standpipe Systems
- AR. Procedures for Inspecting Standpipe Systems
1. Initial Installation Inspection
  2. In Service (Periodic) Inspections
  3. Maintenance Requirements

VI. METHODS OF INSTRUCTION:

- A. **Lecture** -
- B. **Discussion** -
- C. Audio-visual aids
- D. **Field Trips** -
- E. Group exercises
- F. Individual activities
- G. Power point presentations

VII. TYPICAL ASSIGNMENTS:

A. Student will participate in all Group Exercises. B. Students shall complete all required course "Activity Sheet" assignments. C. Students shall complete all required reading assignments.

VIII. EVALUATION:

A. **Methods**

1. Exams/Tests
2. Quizzes
3. Home Work
4. Other:
  - a. Methods
    1. Short quizzes (CFSTES required quizzes)
    2. Completion of Individual "Activity Sheets"
    3. Final examination (CFSTES State Certification Final)

B. **Frequency**

1. Frequency
  - a. Quizzes will be given at start of each class session
  - b. Homework will be assigned from each class session

IX. TYPICAL TEXTS:

1. - *Fire Prevention-IB Workbook.*, State Fire Marshal's Office, 2008.
2. - *Fire Inspection and Code Enforcement.* 6th ed., IFSTA, 0.
3. - *California Fire Code.*, California Building Standards Commission, 2007.
4. - *Barclays Official California Code of Regulations Title 19.*, West Group, 0.

X. OTHER MATERIALS REQUIRED OF STUDENTS: