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## Attachment 14

**Date:** August 22, 2019

**To:** State Board of Fire Services

**From:** Caryn Petty, Deputy State Fire Marshal, State Fire Training

### **SUBJECT/AGENDA ACTION ITEM:**

Fire Inspector 2 Professional Qualifications and Curriculum Update

### **Recommended Actions:**

Information/Discussion

### **Background Information:**

In June 2018, the current Inspector 2 curriculum underwent evaluation and alignment with the 2016 edition of NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner by State Fire Training (SFT). A cadre was formed to review the changes and to determine if any other updates were required.

### **Analysis/Summary of Issue:**

In April 2019, the development cadre met and offered curriculum feedback for necessary updates and revisions. After a complete curriculum review, there were minor changes needed to enhance the curriculum.

- Eight (8) hours of additional instruction were provided in the Fire Inspector 2C: Inspecting New and Existing Fire and Life Safety Systems and Equipment course to allow for complete instructional delivery
- SFT is now using the primary NFPA Professional Qualification for the certification year (2014 for Inspector 1). This is to help SFT Staff track editions.
- Document reference dates have been aligned to reflect a January 2020 implementation

- The requirement to have ICC Fire Inspector I has been moved from initiating the task book, to completing certification.
- There are no required addendums between the 2010 and 2014 editions of the Fire Inspector 2 Task Book(s).
- State Fire Training updated all referenced documents (CIRM, Course Plan, Task Book, and CTS Guide) to reflect the revised implementation date of September 2019.

# FIRE INSPECTOR 2 (2014)

## Certification Training Standards Guide



California Department of Forestry and Fire Protection  
Office of the State Fire Marshal  
State Fire Training

# **Fire Inspector 2 (2014)**

## **Certification Training Standards Guide**

### **NFPA 1031 (2014) Fire Inspector 2 and 3**

#### **January 2020 Edition**

This CTS guide utilizes NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (2014) Chapter 5 Fire Inspector 2 and Chapter 6 Fire Inspector 2I to provide the qualifications for State Fire Training's Fire Inspector 2 certification.

State Fire Training coordinated the development of this CTS guide. Before its publication, the Statewide Training and Education Advisory Committee (STEAC) and the State Board of Fire Services (SBFS) recommended this CTS guide for adoption by the Office of the State Fire Marshal (OSFM).

Cover photo courtesy of Dennis Mathisen, Roseville Fire Department



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# State Fire Training

## Mission

To enable the California Fire Service to safely protect life and property through education, training, and certification.

## The California Fire Service Training and Education System

The California Fire Service Training and Education System (CFSTES) was established to provide a single statewide focus for fire service training in California. CFSTES is a composite of all the elements that contribute to the development, delivery, and administration of training for the California fire service. The authority for the central coordination of this effort is vested in the Training Division of the California State Fire Marshal's Office with oversight provided by the State Board of Fire Services.

CFSTES facilitates, coordinates, and assists in the development and implementation of standards and certification for the California fire service. CFSTES:

1. Administers the California Fire Academy System
2. Provides accredited courses leading to certification and approved standardized training programs for local and regional delivery
3. Administers the national accreditation process in California
4. Publishes certification training standards, course plans, and a capstone task book for each certified level in the California fire service

CFSTES is a fire service system developed by the fire service, for the fire service. It is only as successful and effective as the people involved in it.

## Acknowledgments

State Fire Training appreciates the hard work and accomplishments of those who built the solid foundation on which this program continues to grow.

State Fire Training gratefully acknowledges the following individuals and organizations for their diligent efforts and contributions that made the development and publication of this document possible.

### CAL FIRE

**Thom Porter**  
*Director, CAL FIRE*

**Mike Richwine**  
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**Andrew Henning**  
*Chief, State Fire Training*

**Ron Coleman**  
*Chair, STEAC*

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## Acknowledgments

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*Fire Marshal, Moraga-Orinda Fire Department*

**Ian Hardage**

*Assistant Fire Marshal, Santa Rosa Fire Department*



## How to Read a CTS Guide

State Fire Training develops a Certification Training Standards (CTS) Guide for a variety of job functions in the fire service such as firefighter, driver/operator, fire instructor, and company officer. The CTS guide lists the requisite knowledge and skills and the job performance requirements a person is expected to complete in order to become certified in a specific function. CTS guides are appropriate for fire service personnel and individuals in related occupations pursuing State Fire Training certification.

Each CTS guide serves as a foundation for the certification programs recommended for adoption by the Office of the State Fire Marshal. Any certification program must be based on job-related knowledge and measurable performance standards. To master the knowledge and skills needed for specialized operations, individuals will require additional training to augment the performance standards included in the CTS guide.

Within the CTS guide, it is impossible to capture the different policies and procedures of each organization in the California fire service. Individuals aspiring to meet State Fire Training's certification training standards must do so in accordance with the codes, standards, regulations, policies, and standard operating procedures applicable within their own departments or jurisdictions.

### **Format**

Each certification training standard included in the CTS guide includes the following:

#### **Section Heading**

The section heading describes a general category for a group of training standards. For example, the Fire Marshal CTS includes the following sections: Administration, Risk Management, Community Relations, Professional Development, Regulatory Programs, Fire and Life Safety, and Investigation. Each section contains one or more individual training standards.

#### **Training Standard Title**

The training standard title provides a general description of the performance requirement contained within the standard.

#### **Authority**

The CTS guide references each standard with one or more paragraphs of the corresponding National Fire Protection Association (NFPA) Professional Qualifications. This ensures that each fire service function within California's certification system meets or exceeds NFPA standards.

When California requirements exceed the NFPA standard, the CTS guide cites the Office of the State Fire Marshal as the authority and prints the corresponding information in *italics*.

### **Given**

This section lists the objects, equipment, materials, or facilities that an individual needs in order to acquire the requisite knowledge and skills or to accomplish the job performance requirement(s) within a training standard.

### **Requisite Knowledge and Skills**

This section lists the knowledge and skills that an individual must acquire in order to accomplish the job performance requirement(s) within a training standard.

This section does not include NFPA requisite knowledge or skills that are too general to teach or that individuals should develop through life experiences. For example, a training standard would not list “communicate orally and in writing” or “ability to relate interpersonally” unless they specifically apply to a job performance requirement about acquiring communication skills or developing interpersonal relationships.

### **Job Performance Requirements**

This section includes one or more written statements that describe a specific job-related task and define measurable or observable outcomes. After an individual completes all coursework and requisite requirements, the capstone task book process verifies completion of job performance requirements.

## **Content**

In addition to the individual certification training standards, the CTS guide also includes State Fire Training Revisions and Errata pages.

### **State Fire Training Content**

Located at the back of the CTS guide, this table documents any significant revisions made by State Fire Training to the NFPA standards in the development of this CTS guide. This table is used to justify content additions and advise the course plan development team.

### **Errata**

Located at the back of the CTS guide, this page documents any changes made to the CTS guide outside of the five-year NFPA revision cycle.

## Fire Inspector 2

### Section 1: Definition of Duties

#### 1-1: Definition of Duties for Fire Inspector 2

##### Authority

1. NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (2014)
  - Paragraph 5.2
  - Paragraph 5.3
  - Paragraph 5.4
  - Paragraph 6.2
  - Paragraph 6.3
2. *Office of the State Fire Marshal*

##### Given

1. Sections 5.2, 5.3, 5.4, 6.2, and 6.3 of NFPA 1031 (2014)

##### Requisite Knowledge and Skills

1. Identify the administrative duties of a Fire Inspector 2
  - Conducting research
  - Interpreting codes
  - Implementing policy
  - Testifying at legal proceedings
  - Creating forms and job aids
  - Recommending, creating, and evaluating policies and procedures for life safety inspections and code enforcement activities
2. Identify the field inspection duties of a Fire Inspector 2
  - Conducting code enforcement inspections
  - Analyzing new and existing structures and properties for construction, occupancy, fire protection, and exposures
  - Analyzing code compliance alternatives
  - Evaluating construction, occupancy, fire protection, and exposures
  - Evaluating emergency planning services
3. Identify the plan review duties of a Fire Inspector 2
  - Field verifying shop drawings, plans and construction documents to ensure that they meet the intent of applicable codes and standards for fire and life safety
4. Describe how one's ethics and core values impact the work environment

## **Fire Inspector II**

### Section 1: Definition of Duties

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#### **Job Performance Requirements**

There are no job performance requirements identified for this training standard.

## Section 2: Administration

### 2-1: Processing Permit Applications

#### Authority

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.2.1

#### Given

1. A specific request

#### Requisite Knowledge and Skills

1. *Describe* the permit application process
2. *Identify* applicable codes, standards, policies, and procedures of the jurisdiction
3. Apply requisite knowledge

#### Job Performance Requirements

Evaluate and process a permit application to issue or deny a permit in accordance with applicable codes and standards and jurisdictional policies.

## **2-2: Processing Plan Review Applications**

### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.2.2

### **Given**

1. A specific request

### **Requisite Knowledge and Skills**

1. *Describe* the plan review application process
2. *Discuss* the code requirements of the jurisdiction
3. *Identify* the policies and procedures of the jurisdiction
4. Communicate orally and in writing on matters related to code requirements, policies, and procedures of the jurisdiction

### **Job Performance Requirements**

Evaluate and process a plan review application in accordance with applicable codes and standards and jurisdictional policies.

## **2-3: Investigating Complex Complaints**

### **Authority**

1. NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (2014)
  - Paragraph 5.2.3
2. *Office of the State Fire Marshal*

### **Given**

1. A reported situation or condition

### **Requisite Knowledge and Skills**

1. *Describe methods and procedures to record, validate, and resolve complex complaints*
2. *Identify applicable codes, standards, and policies adopted by the jurisdiction*
3. *Discuss how political pressures impact complaint investigation and resolution*
4. *Interpret codes and standards as they apply to the resolution of a complex complaint*
5. *Recognize problems during the investigation of a complex complaint*
6. *Refer complaints to other agencies when required*

### **Job Performance Requirements**

Investigate complex complaints in order to record complaint information, initiate the investigation process, and resolve the complaint in accordance with application codes and standards and jurisdictional policies.

## **2-4: Recommending Modifications to Codes and Standards**

### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.2.4

### **Given**

1. A fire safety issue

### **Requisite Knowledge and Skills**

1. *Describe* state statutes or local ordinances establishing or empowering the agency to adopt, enforce, and revise codes and standards
2. *Describe* the legal instruments establishing or adopting codes and standards
3. *Describe* the development and adoption process for fire and life safety legislation or regulations
4. Recognize problems *with adopted codes and standards, and* collect and develop potential solutions
5. Identify cost/risk benefits *of modifying codes and standards*

### **Job Performance Requirements**

Recommend modifications to the adopted codes and standards of the jurisdiction that address a problem, need, or deficiency.



## **2-5: Recommending Policies and Procedures for Inspection Services**

### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.2.5

### **Given**

1. Management objectives

### **Requisite Knowledge and Skills**

1. *Identify* the policies and procedures of the jurisdiction related to code enforcement
2. *Describe* sources of detailed and technical information relating to fire protection and life safety
3. Identify approved construction methods and materials related to fire safety
4. Read and interpret construction plans and specifications
5. Educate *supervisors in the need for new policies and procedures*
6. Conduct research *in order to gather or create supporting documentation*
7. Recognize problems *with existing policies and procedures*

### **Job Performance Requirements**

Recommend policies and procedures for delivering inspection services that are in accordance with jurisdictional policies and follow due process of the law.

## 2-6: Generating Written Appeals Correspondence

### Authority

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.2.1

### Given

1. A request for an appeal

### Requisite Knowledge and Skills

1. *Discuss* the established procedure for modification of applicable codes and standards *for the jurisdiction*
2. *Identify* the judicial review process *for the jurisdiction*
3. *Describe* the established appeals procedure *for the jurisdiction*
4. Interpret codes and standards and communicate requirements *via written appeals correspondence*
5. Evaluate *requests for appeal and make decisions related to the appeals process*
6. Issue written reports *as required by jurisdictional appeals procedure*

### Job Performance Requirements

Generate written correspondence related to the issuance of appeals that clearly addresses the issue and is appropriate for the intended audience.

## **2-7: Proposing Technical Reference Material Acquisition**

### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.2.5

### **Given**

1. A scope of responsibility
2. Budget limitations
3. Specific code-related issues

### **Requisite Knowledge and Skills**

1. *Identify* types and sources of publications, including:
  - Approval and listings guides
  - Codes and standards
  - Technical references
2. Recognize the need for materials
3. Identify correct materials *for specific needs*
4. Calculate budget impact *of material acquisition*
5. Make decisions regarding *acquisition* priorities

### **Job Performance Requirements**

Propose the acquisition of technical reference materials that meet specific needs.

## **2-8: Enforcing Permit Regulations**

### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.2.6

### **Given**

1. A permit application or report of a violation
2. Applicable codes and standards *and policies of the jurisdiction*

### **Requisite Knowledge and Skills**

1. *Describe* legal authority for permit issuance and revocation
2. *Identify* applicable codes and standards adopted by the jurisdiction
3. Make decisions *about permit violations and communicate as necessary to enforce regulations*
4. Evaluate consequences of improper enforcement

### **Job Performance Requirements**

Enforce permit regulations in accordance with applicable codes and standards and jurisdictional policies and mitigate violations.

## **2-9: Initiating Legal Action**

### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.2.7

### **Given**

1. A description of a violation
2. A legal opinion

### **Requisite Knowledge and Skills**

1. *Describe* legal procedure for fire code enforcement
2. *Discuss* authority and limitations of police powers
3. Address legal action in accordance with the policies and procedures of the jurisdiction

### **Job Performance Requirements**

Initiate legal action related to a fire code violation in accordance with jurisdictional policies and due process of the law.

## **2-10: Evaluating Inspection Reports**

### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.2.9

### **Given**

1. Applicable codes, standards, policies, and procedures of the jurisdiction

### **Requisite Knowledge and Skills**

1. *Identify* applicable codes and standards adopted by the jurisdiction *and their interrelationships*
2. *Identify* various sources for additional reference materials related to code enforcement
3. *Describe how to evaluate completed inspection reports, forms, and checklists*
4. *Demonstrate* familiarity with code-related research
5. Compare code requirements of a jurisdiction with prepared *inspection* reports
6. Provide corrective information or correction *to subordinate's inspection reports* where necessary

### **Job Performance Requirements**

Evaluate inspection reports and completed forms and checklists for correct, clear, and concise information.

## Section 3: Field Inspection

### 3-1: Computing the Maximum Occupant Load of a Multi-use Building

#### Authority

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.3.1

#### Given

1. Field observations or a description of *a building's* uses

#### Requisite Knowledge and Skills

1. *Describe* how to calculate occupant loads for an occupancy and for building use
2. *Describe* code requirements, regulations, operational features, and fire hazards presented by various occupancies
3. Calculate occupant loads
4. Identify occupancy factors related to various occupancy classifications
5. Use measuring tools, *including a calculator*, to compute the maximum allowable occupant load of a multi-use building

#### Job Performance Requirements

Compute the maximum allowable occupant load of a multi-use building in accordance with applicable codes and standards.

### **3-2: Classifying Occupancy in a Mixed-use Building**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.3.2

#### **Given**

1. A description of *a building's* uses

#### **Requisite Knowledge and Skills**

1. *Describe* the occupancy classification, applicable codes and standards, operational features, and fire hazards presented by various occupancies
2. Interpret code requirements and recognize building uses that fall into each occupancy classification

#### **Job Performance Requirements**

Identify the occupancy classification of a mixed-use building in accordance with applicable codes and standards.



### **3-3: Evaluating Buildings**

#### **Authority**

1. NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (2014)
  - Paragraph 5.3.3
2. *Office of the State Fire Marshal*

#### **Given**

1. An approved set of plans
2. Construction features

#### **Requisite Knowledge and Skills**

1. *Describe how to evaluate a building's area, height, and occupancy classification*
2. *Describe building construction with an emphasis on fire-rated construction*
3. *Describe how to evaluate and analyze construction methods and assemblies for fire rating*
4. *Interpret analysis of test results*
5. *Discuss manufacturer's specifications*
6. Identify characteristics of each type of building construction and occupancy classification

#### **Job Performance Requirements**

Evaluate a building's area, height, occupancy classification, and construction type to verify the building is in accordance with applicable codes and standards.

### 3-4: Evaluating Fire, Life Safety, and Property Protection Equipment

#### Authority

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.3.4

#### Given

1. Field observations of the facility and documentation
2. The hazards protected
3. System specifications

#### Requisite Knowledge and Skills

1. *Identify* applicable codes and standards for fire protection systems
2. *Discuss* basic physical science as it relates to fire behavior and fire suppression
3. *Discuss* implications and hazards associated with system operation
4. *Describe* installation techniques and acceptance inspection
5. *Describe* testing and reports of maintenance of completed installations
6. *Describe* the use and function of various systems
7. Recognize problems *with fire protection systems and equipment*
8. Use codes and standards *to evaluate fire protection systems and equipment*
9. Read reports, plans, and specifications *to determine whether life safety and property protection measures are appropriate for the protected occupancies or hazards*

#### Job Performance Requirements

Evaluate fire protection systems and equipment provided for life safety and property protection to approve them for the protected occupancy or hazard.

### **3-5: Analyzing Egress Elements**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.3.5

#### **Given**

1. Observations made during a field inspection

#### **Requisite Knowledge and Skills**

1. *Describe* acceptable means of egress devices
2. Calculate egress requirements
3. Make decisions related to the adequacy of egress

#### **Job Performance Requirements**

Analyze the egress elements of a building or portion of a building to verify the provision and location of egress elements in accordance with applicable codes and standards and identify, document, and report deficiencies in accordance with jurisdictional policies.

### **3-6: Evaluating Hazardous Conditions Involving Equipment, Processes, and Operations**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.3.6

#### **Given**

1. Field observations
2. Documentation

#### **Requisite Knowledge and Skills**

1. *Identify* applicable codes and standards
2. *Describe* accepted fire protection practices
3. *Identify ignition sources related to hazardous conditions, equipment, and processes*
4. *Describe* safe housekeeping practices
5. *Identify* additional reference materials related to protection of hazardous processes and code enforcement
6. Observe *hazardous conditions created by installation of equipment, processes and operations*
7. Recognize problems *with equipment, processes, and operations involving hazardous conditions*
8. Interpret codes and communicate *deficiencies in accordance with the policies of the AHJ*

#### **Job Performance Requirements**

Evaluate hazardous conditions involving equipment, processes, and operations to verify installation in accordance with applicable codes and standards and identify, document, and report deficiencies in accordance with jurisdictional policies.

### **3-7: Evaluating Emergency Planning and Preparedness Procedures**

#### **Authority**

1. NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (2014)
  - Paragraph 5.3.7
2. *Office of the State Fire Marshal*

#### **Given**

1. Existing or proposed plans
2. Procedures and applicable codes and standards

#### **Requisite Knowledge and Skills**

1. *Describe* the occupancy requirements for emergency evacuation plans
2. *Describe* fire safety programs for crowd control
3. *Identify* the roles of agencies and individuals in implementation and development of emergency plans
4. *Describe how to evaluate emergency planning and preparedness procedures to determine applicability to the facility*
5. Compare submitted plans and procedures with applicable codes and standards adopted by the jurisdiction

#### **Job Performance Requirements**

Evaluate emergency planning and preparedness procedures to determine compliance.

### **3-8: Verifying Code Compliance for Storage, Handling, and Use of Flammable and Combustible Liquids and Gases**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.3.8

#### **Given**

1. Field observations
2. Inspection guidelines from the authority having jurisdiction

#### **Requisite Knowledge and Skills**

1. *Describe the properties and hazards of flammable and combustible liquids and gases*
2. *Discuss material safety data sheet*
3. *Describe safe handling practices for flammable and combustible liquids and gases*
4. *Identify applicable codes and standards*
5. *Describe fire protection systems and equipment approved for the material*
6. *Describe fire behavior as it relates to flammable and combustible liquids and gases*
7. *Identify safety procedures*
8. *Identify storage compatibility requirements*
9. *Identify typical fire hazards associated with processes or operations utilizing flammable and combustible liquids*
10. *Observe and recognize problems with storage, handling, and use of flammable and combustible liquids and gases*
11. *Interpret codes in order to make decisions related to the compliant storage, handling, and use of flammable and combustible liquids and gases*
12. *Communicate deficiencies in accordance with applicable codes and standards and jurisdictional policies*

#### **Job Performance Requirements**

Verify code compliance for storage, handling, and use of flammable and combustible liquids and gases to identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.

### 3-9: Evaluating Code Compliance for the Storage, Handling, and Use of Hazardous Materials

#### Authority

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.3.9

#### Given

1. Field observations

#### Requisite Knowledge and Skills

1. *Describe the properties and hazards associated with hazardous materials*
2. *Discuss material safety data sheet*
3. *Describe safe handling, use, and dispensing practices for hazardous materials*
4. *Identify applicable codes and standards*
5. *Describe fire protection systems and equipment approved for the material*
6. *Describe fire behavior as it relates to hazardous materials*
7. *Identify safety procedures*
8. *Describe chemical reactions*
9. *Identify storage compatibility requirements*
10. *Describe how to determine maximum allowable quantities (MAQ)*
11. *Describe control areas*
12. *Describe how to evaluate control areas as they relate to hazardous materials storage*
13. *Describe general requirements for quantities not exceeding maximum allowable quantities per control area*
14. *Identify fire hazards associated with processes or operations utilizing hazardous materials*
15. *Describe the requirements for, and contents of, a Hazardous Materials Management Plan*
16. *Observe and recognize problems with storage, handling, and use of hazardous materials*
17. *Interpret codes in order to make decisions related to the compliant storage, handling, and use of hazardous materials*
18. *Communicate deficiencies in accordance with applicable codes and standards and jurisdictional policies*

#### Job Performance Requirements

Evaluate code compliance for the storage, handling, and use of hazardous materials to identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.

### **3-10: Determining Fire Growth Potential**

#### **Authority**

1. NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (2014)
  - Paragraph 5.3.10
2. *Office of the State Fire Marshal*

#### **Given**

1. Field observations or plans

#### **Requisite Knowledge and Skills**

1. *Describe* flame spread and smoke development ratings of:
  - Contents
  - Interior finishes
  - Building construction elements
  - Decorations
  - Decorative materials
  - Furnishings
2. *Describe how to determine compliance of contents, interior finish, and construction elements*
3. *Describe how to identify, document, verify, and report or resolve deficiencies*
4. *Discuss* safe housekeeping practices
5. *Communicate deficiencies in building contents, interior finishes, and construction elements*
6. *Interpret* codes and standards *related to building contents, interior finishes, and construction elements*
7. *Recognize* hazardous conditions *and make decisions regarding corrections*

#### **Job Performance Requirements**

Determine fire growth potential in a building or space by evaluating the contents, interior finishes and construction elements for compliance, and identify, document, and correct deficiencies in accordance with applicable codes and standards and jurisdictional policies.



### **3-11: Verifying Installation, Inspection, and Testing of Life Safety Systems and Building Services Equipment**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.3.11

#### **Given**

1. A performance-based design

#### **Requisite Knowledge and Skills**

1. *Describe* applicable codes and standards for installation and testing of fire protection systems
2. *Describe how to verify that means of egress are installed, inspected, and tested to perform as designed*
3. *Describe how to verify that building services equipment is installed, inspected, and tested to perform as designed*
4. Witness and document tests of fire protection systems and building services equipment

#### **Job Performance Requirements**

Verify that life safety systems and building services equipment are installed, inspected, and tested to perform as described in the engineering documents and the operations and maintenance manual that accompanies the design to identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.

### **3-12: Verifying Code Compliance of Building Service Equipment and Operations**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.3.12

#### **Given**

1. Field observations

#### **Requisite Knowledge and Skills**

1. *Describe* types, installation, maintenance, and use of building service equipment
2. *Describe* the operation of smoke and heat vents
3. *Describe* the installation of kitchen cooking equipment (including hoods and ducts), laundry chutes, elevators, and escalators
4. *Identify* applicable codes and standards adopted by the jurisdiction
5. *Observe and recognize problems with HVAC and other building service equipment and operations*
6. Interpret codes and standards *related to building service equipment and write reports to document deficiencies*

#### **Job Performance Requirements**

Verify code compliance of heating, ventilation, air conditioning, and other building service equipment and operations to verify maintenance in accordance with applicable codes and standards and identify, document, and report deficiencies in accordance with jurisdictional policies.

### **3-13: Assessing Alternative Methods to Adjust Occupant Loads**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.3.1

#### **Given**

1. A description of an area, building, or portion of a building and its intended use

#### **Requisite Knowledge and Skills**

1. *Identify* applicable codes and standards adopted by the jurisdiction
2. *Discuss* occupancy requirements *for adjusting occupant loads*
3. *Describe impact of egress requirements on alternative methods to adjust occupant loads*
4. *Describe how to evaluate* evacuation plan procedures *related to adjusted occupant loads*
5. Evaluate evacuation plan procedures
6. Read plans and reports, interpret codes and standards, and make decisions related to adjusting occupant loads
7. Analyze performance-based reports

#### **Job Performance Requirements**

Assess alternative methods to adjust occupant loads to keep the occupant load in accordance with applicable codes and standards.

### **3-14: Proposing Correction for Egress Deficiencies**

#### **Authority**

1. NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (2014)
  - Paragraph 6.3.2
2. *Office of the State Fire Marshal*

#### **Given**

1. A list of means of egress deficiencies in a building
2. The proposed correction

#### **Requisite Knowledge and Skills**

1. *Identify* applicable codes and standards adopted by the jurisdiction
2. *Describe impact of* occupancy requirements *on egress deficiencies*
3. *Describe* means of egress requirements *for a building or portion of a building*
4. *Read and analyze* plans and *performance-based* reports
5. Interpret codes and standards *related to egress deficiencies and make decisions regarding correction*

#### **Job Performance Requirements**

Evaluate each deficiency and its proposed correction for compliance with applicable codes and standards, and identify, document, and report egress deficiencies in accordance with jurisdictional policies.

### **3-15: Evaluating Construction Type of an Addition or Remodel**

#### **Authority**

1. NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (2014)
  - Paragraph 6.3.3
2. *Office of the State Fire Marshal*

#### **Given**

1. A description of a building and its use

#### **Requisite Knowledge and Skills**

1. *Identify* policies, procedures, and applicable codes and standards adopted by the jurisdiction
2. *Describe the impact of* occupancy requirements *on construction type*
3. *Describe* construction methods
4. *Describe building construction features required in a wildland urban interface environment, including:*
  - *Ignition-resistant construction*
  - *Roofing*
  - *Vents*
  - *Exterior coverings*
  - *Exterior doors and windows*
  - *Decking*
  - *Ancillary structures*
5. Recognize problems *with the construction type of an addition or remodeling project*
6. Read reports and plans *as necessary to evaluate construction type*

#### **Job Performance Requirements**

Evaluate the construction type required for an addition or remodeling project based on applicable codes and standards, and identify, document, and report deficiencies in accordance with jurisdictional policies.

### **3-16: Evaluating Alternative Protection Measures of Equipment, Operations, and Processes**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.3.4

#### **Given**

1. Deficiencies noted during a field inspection of a facility
2. Proposed alternative methods

#### **Requisite Knowledge and Skills**

1. *Identify* applicable codes and standards adopted by the jurisdiction
2. *Describe* hazards of the process or operation
3. *Discuss* fire protection systems *requirements*
4. *Identify* inherent hazards *associated with equipment, operations, and processes*
5. *Identify necessary* safety precautions
6. *Observe and recognize problems with alternative protection measures for equipment, operations, and processes*
7. *Verify compliance of alternative protection measures for equipment, operations, and processes in order to resolve deficiencies*

#### **Job Performance Requirements**

Evaluate alternative protection measures of equipment, operations, and processes to verify that the level of protection they provide complies with the intent of applicable codes and standards.

### **3-17: Evaluating Fire Protection Plans and Practices**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.3.5

#### **Given**

1. A field report describing a facility housing a complex process or operation

#### **Requisite Knowledge and Skills**

1. *Identify the fire growth potential associated with complex processes or operations*
2. *Identify the fire protection levels for various complex processes or operations*
3. *Analyze various scenarios to determine appropriate fire protection level*
4. *Describe evacuation procedures*
5. *Observe and recognize problems with fire protection plans and practices*
6. *Evaluate hazards and verify appropriate protection level in accordance with applicable codes and standards and jurisdictional policies*

#### **Job Performance Requirements**

Evaluate fire protection plans and practices to determine the fire growth potential for all areas and verify that the protection level is appropriate for the hazard in accordance with applicable codes and standards and jurisdictional policies.

### **3-18: Recommending Criteria for Developing Emergency Plans and Procedures**

#### **Authority**

1. NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (2014)
  - Paragraph 6.3.6
2. *Office of the State Fire Marshal*

#### **Given**

1. A description of a building and its use

#### **Requisite Knowledge and Skills**

1. *Identify* applicable codes and standards adopted by the jurisdiction
2. *Discuss* the purpose, use, and applicability of evacuation plans
3. *Identify information sources and recommend criteria for emergency evacuation plans*
4. *Describe* human behavior *during fires and other emergencies*
5. Read *emergency plans and reports*
6. Recognize problems *with emergency plans and procedures*

#### **Job Performance Requirements**

Recommend criteria for developing emergency planning and procedures in accordance with applicable codes and standards and jurisdictional policies.



### **3-19: Evaluating Compliance Alternatives for the Storage, Handling, and Use of Hazardous Materials**

#### **Authority**

1. NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (2014)
  - Paragraph 6.3.7
2. *Office of the State Fire Marshal*

#### **Given**

1. Field inspection reports
2. Proposed compliance alternatives

#### **Requisite Knowledge and Skills**

1. *Identify* other agencies that have requirements and jurisdiction related to hazardous materials
2. Observe and recognize problems *with compliance alternatives for the storage, handling, and use of hazardous materials*
3. *Describe how to evaluate compliance alternatives for the storage, handling, and use of hazardous materials to ensure compliance with the intent of applicable codes and standards and jurisdictional policies*
4. Read plans, reports and material safety data sheets *as required to evaluate compliance alternatives for the storage, handling, and use of hazardous materials*

#### **Job Performance Requirements**

Evaluate compliance alternatives for the storage, handling, and use of hazardous materials to verify that their level of safety complies with the intent of applicable codes and standards and jurisdictional policies.

### **3-20: Evaluating Compliance Alternatives for the Storage, Handling, and Use of Flammable or Combustible Liquids and Gases**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.3.8

#### **Given**

1. Field inspection reports
2. Proposed compliance alternatives

#### **Requisite Knowledge and Skills**

1. *Identify* other agencies that have requirements and jurisdiction related to flammable and combustible liquids and gases
2. Read plans, reports and material safety data sheets *as required to evaluate compliance alternatives for the storage, handling, and use of flammable or combustible liquids and gases*

#### **Job Performance Requirements**

Evaluate compliance alternatives for the storage, handling, and use of flammable or combustible liquids and gases so that their storage, handling, and use comply with the intent of applicable codes and standards and jurisdictional policies.

### **3-21: Witnessing an Acceptance Test for an Integrated Fire Protection System**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.3.9

#### **Given**

1. Approved shop drawings
2. Test protocols
3. An installed system

#### **Requisite Knowledge and Skills**

1. *Describe* acceptance test procedures
2. *Identify* appropriate codes and standards
3. Supervise the performance of acceptance tests

#### **Job Performance Requirements**

Witness an acceptance test for an integrated fire protection system to evaluate for compliance, and identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.

### **3-22: Developing Emergency Access Criteria**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.3.10

#### **Given**

1. The jurisdiction's emergency fire apparatus
2. The jurisdiction's fire suppression practices

#### **Requisite Knowledge and Skills**

1. *Discuss* emergency access and accessibility requirements of the jurisdiction
2. *Describe* the performance specifications related to access of emergency vehicles of the jurisdiction
3. Identify emergency access requirements contained in the applicable codes and standards
4. Make decisions as required to develop emergency access criteria
5. Use measuring tools *to evaluate emergency fire apparatus for use in planning emergency access criteria*

#### **Job Performance Requirements**

Develop emergency access criteria to deliver fire suppression services in accordance with jurisdictional policies.

### **3-23: Evaluating Compliance of Life Safety Systems and Building Services Equipment with Construction Documents**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 6.3.11

#### **Given**

1. A performance-based design

#### **Requisite Knowledge and Skills**

1. *Identify* applicable codes and standards for installation and testing of fire protection systems, means of egress, and building services equipment
2. Witness and document tests of fire protection systems and building services equipment

#### **Job Performance Requirements**

Evaluate compliance with construction documents to ensure after installation, inspection, and testing, that life safety systems and building services equipment perform as described in the engineering documents and the operations and maintenance manual that accompanies the design; and to identify, document, and report deficiencies in accordance with the policies of the jurisdiction.

## Section 4: Plan Review

### 4-1: Classifying the Occupancy of a Building

#### Authority

1. NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (2014)
  - Paragraph 5.4.1
2. *Office of the State Fire Marshal*

#### Given

1. A building's plans and specifications
2. A building's description

#### Requisite Knowledge and Skills

1. *Describe types of plan views and system plans*
2. *Describe the systematic plan review process*
3. *Describe how to identify an occupancy classification from a set of plans*
4. *Identify applicable codes, standards, and regulations*
5. *Discuss how operational features may impact occupancy classification*
6. *Identify fire hazards presented by various occupancies*
7. *Read plans to determine occupancy classification*

#### Job Performance Requirements

Classify the occupancy of a building in accordance with applicable codes and standards and jurisdictional policies.

## **4-2: Computing Maximum Allowable Occupancy Loads**

### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.4.2

### **Given**

1. A floor plan of a building or portion of a building

### **Requisite Knowledge and Skills**

1. *Describe* how to calculate occupant loads for an occupancy and building use
2. *Identify* codes, requirements, and regulations
3. *Discuss* how operational features such as fixed seating *impact occupant load*
4. *Identify* fire hazards presented by various occupancies
5. Calculate accurate occupant loads
6. Identify occupancy factors related to various occupancy classifications
7. Use measuring tools, *including a calculator*, to compute maximum allowable occupancy loads
8. Read plans to compute maximum allowable occupancy loads

### **Job Performance Requirements**

Compute the maximum allowable occupant load of a building or portion of the building in accordance with applicable codes and standards and jurisdictional policies.

### **4-3: Reviewing Proposed Installation of Fire Protection Systems**

#### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.4.3

#### **Given**

1. Shop drawings and system specifications for a process or operation

#### **Requisite Knowledge and Skills**

1. *Describe* proper selection, distribution, location, and testing of portable fire extinguishers
2. *Discuss* methods used to evaluate the operational readiness of water supply systems used for fire protection
3. *Describe* the evaluation and testing of automatic sprinkler, water spray, and standpipe systems and fire pumps
4. *Describe* the evaluation and testing of fixed fire suppression systems
5. *Describe* the evaluation and testing of automatic fire detection and alarm systems and devices
6. Read basic floor plans or shop drawings
7. Identify symbols used by the jurisdiction

#### **Job Performance Requirements**

Review the proposed installation of fire protection systems for code compliance and installation in accordance with the approved drawings, and identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.



## **4-4: Reviewing Installed Fire Protection Systems**

### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.4.4

### **Given**

1. An installed system
2. Shop drawings
3. System specifications for a process or operation

### **Requisite Knowledge and Skills**

1. *Describe* proper selection, distribution, location, and testing of portable fire extinguishers
2. *Discuss* methods used to evaluate the operational readiness of water supply systems used for fire protection
3. *Describe* the evaluation and testing of automatic sprinkler, water spray, and standpipe systems, and fire pumps
4. *Describe* the evaluation and testing of fixed fire suppression systems
5. *Describe* the evaluation and testing of automatic fire detection and alarm systems and devices
6. Read basic floor plans or shop drawings

### **Job Performance Requirements**

Verify that the fire protection systems are installed in compliance with code and in accordance with the approved drawings, and identify, document, and report deficiencies in accordance with applicable codes, standards, and jurisdictional policies.

## **4-5: Verifying Means of Egress Elements**

### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.4.5

### **Given**

1. A floor plan of a building or portion of a building

### **Requisite Knowledge and Skills**

1. *Identify* applicable codes and standards adopted by the jurisdiction
2. *Describe the* standard symbols used in plans to *denote means of egress*
3. *Discuss* field verification practices *used to confirm appropriate egress elements*
4. Read plans *as required to verify means of egress elements*
5. Research codes and standards *to verify means of egress elements*

### **Job Performance Requirements**

Verify the provision of means of egress elements; identify and check elements against applicable codes and standards; and identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.

## **4-6: Verifying Construction Type**

### **Authority**

NFPA 1031 *Standard for Professional Qualifications for Fire Inspectors and Plan Examiner* (2014)

- Paragraph 5.4.6

### **Given**

1. A set of approved plans and specifications

### **Requisite Knowledge and Skills**

1. *Discuss* building construction with an emphasis on fire-rated construction
2. *Describe* evaluation of methods of construction and assemblies for fire rating
3. *Interpret* analysis of test results
4. *Discuss* manufacturer's specifications
5. Identify characteristics of each type of building construction

### **Job Performance Requirements**

Verify that the construction type of a building or portion thereof complies with approved plans and applicable codes and standards.

# State Fire Training Content

## Code Key

### Blocks

- G = Given
- RKS = Requisite Knowledge and Skills
- JPR = Job Performance Requirements
- NCTS = New certification training standard

## Certification: Fire Inspector 2

CTS	Block	Addition	Justification	Source/Reference
2-3	RKS	Describe methods and procedures to record, validate, and resolve complex complaints	Added to clarify intent of JPR.	N/A
2-3	RKS	Discuss how political pressures impact complaint investigation and resolution	Added to clarify intent of JPR.	N/A
2-8	G	Added /and policies of the jurisdiction/.	Added to match language in JPR.	N/A
2-10	RKS	Describe how to evaluate completed inspection reports, forms, and checklists	Added to match language in JPR.	N/A
2-10	RKS	Added /to subordinate's inspection reports/.	Added to clarify intent of JPR.	N/A
3-3	RKS	Describe how to evaluate a building's area, height, and occupancy classification	Added to match JPR requirements.	N/A
3-3	RKS	Added /analyze/.	Added to increase level of learning required by JPR.	N/A
3-7	RKS	Describe how to evaluate emergency planning and preparedness procedures to determine applicability to the facility	Added to clarify intent of JPR.	N/A

## State Fire Training Content

CTS	Block	Addition	Justification	Source/Reference
3-8	RKS	Added /and gases/.	Added to match JPR requirements.	
3-9	RKS	Added /use, and dispensing/.	Added to match JPR requirements/clarify NFPA intent.	N/A
3-9	RKS	Describe how to determine maximum allowable quantities (MAQ)	This task is not included in NFPA 1031 but is required by California law.	California Fire Code (2016)
3-9	RKS	Describe control areas	This task is not included in NFPA 1031 but is required by California law.	California Fire Code (2016)
3-9	RKS	Describe how to evaluate control areas as they relate to hazardous materials storage	This task is not included in NFPA 1031 but is required by California law.	California Fire Code (2016)
3-9	RKS	Describe general requirements for quantities not exceeding maximum allowable quantities per control area	This task is not included in NFPA 1031 but is required by California law.	California Health & Safety Code, Division 20, Chapter 6.95
3-9	RKS	Describe the requirements for, and contents of, a Hazardous Materials Management Plan	This task is not included in NFPA 1031 but is required by California law.	California Health & Safety Code, Division 20, Chapter 6.11
3-10	RKS	Describe how to determine compliance of contents, interior finish, and construction elements	Added to match JPR requirements.	N/A
3-10	RKS	Describe how to identify, document, verify, and report or resolve deficiencies	Added to match JPR requirements.	N/A
3-15	RKS	Describe building construction features required in a wildland urban interface environment, including:	This task is not included in NFPA 1031 but is required by California law.	<ul style="list-style-type: none"> <li>California Building Code Chapter 7A (current)</li> <li>Public Resources</li> </ul>

**State Fire Training Content**

<b>CTS</b>	<b>Block</b>	<b>Addition</b>	<b>Justification</b>	<b>Source/Reference</b>
		<ul style="list-style-type: none"> <li>• Ignition-resistant construction</li> <li>• Roofing</li> <li>• Vents</li> <li>• Exterior coverings</li> <li>• Exterior doors and windows</li> <li>• Decking</li> <li>• Ancillary structures</li> </ul>		Code Section 4291
3-18	RKS	Identify information sources and recommend criteria for emergency evacuation plans	Added to clarify intent of JPR.	N/A
3-19	RKS	Describe how to evaluate compliance alternatives for the storage, handling, and use of hazardous materials to ensure compliance with the intent of applicable codes and standards and jurisdictional policies	Added to match JPR requirements.	N/A
4-1	RKS	Describe types of plan views and system plans	Added to clarify intent of JPR.	N/A
4-1	RKS	Describe the systematic plan review process	Added to clarify intent of JPR.	N/A

## Errata

### Code Key

#### Blocks

- G = Given
- RKS = Requisite Knowledge and Skills
- JPR = Job Performance Requirements
- NCTS = New certification training standard

#### Changes

- New text show in underline
- Deleted text shown in ~~strikeout~~

Not Applicable

## Certification History

### January 2020

The September 2019 changes reflect updates based upon the 2014 edition of NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner. There were no significant changes found within NFPA 1031 Chapter 5 and Chapter 6. Some editorial changes were made as well as updating the edition of NFPA 1031. The following SFT documents were updated:

- Certification Training Standards Guide (CTS) Guide
- Course Plans
- Activities
- Task Book

### October 2010

In October 2010, SFT released the new Fire Inspector 1 curriculum and certification as a replacement for Fire Prevention Officer certification. The certification was based off the 2009 edition of NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner. Through the contract with California State University, Sacramento, Department of Continuing Education, a development cadre was formed with fire service personnel representing organizations throughout the state.





# Fire Prevention Administration

## Course Plan

### Course Details

<b>Certification:</b>	Fire Inspector 2
<b>CTS Guide:</b>	Fire Inspector 2 Certification Training Standard (2014)
<b>Description:</b>	This course provides students with a basic knowledge of the administrative requirements related to the roles and responsibilities of a Fire Inspector 2 including processing permit and plan review applications, enforcing permit regulations, investigating complex complaints, recommending modifications to codes and standards, recommending policies and procedures for inspection services, generating written appeals correspondence, initiating legal action, evaluating inspection reports, and proposing technical reference material acquisition.
<b>Designed For:</b>	The certified Fire Inspector 1 advancing to the Fire Inspector 2 classification
<b>Prerequisites:</b>	Fire Inspector 1A, 1B, 1C, and 1D <b>OR</b> Fire Prevention 1A, 1B, and 1C
<b>Standard:</b>	Complete all activities and formative tests. Complete all summative tests with a minimum score of 80%.
<b>Hours:</b>	Lecture: 10:30 Activities: 4:30 Testing: 1:00
<b>Hours (Total):</b>	16:00
<b>Maximum Class Size:</b>	30
<b>Instructor Level:</b>	Primary Instructor
<b>Instructor/Student Ratio:</b>	1:40
<b>Restrictions:</b>	None
<b>SFT Designation:</b>	CFSTES

### Required Resources

#### Instructor Resources

To teach this course, instructors need:

- California Building Code  
(International Code Council, current edition)
- California Code of Regulations (CCR) Title 19  
(Office of Administrative Law, <https://oal.ca.gov/>)
- California Fire Code  
(International Code Council, current edition)

Reference manual options:

- *Fire Inspection and Code Enforcement Instructor Resource Kit*  
(IFSTA, 8th edition)

Or the combination of the following:

- *Fire Inspector: Principles and Practice*  
(International Association of Fire Chiefs, Revised Enhanced 1st edition, Jones & Bartlett Learning, ISBN: 9781284137743)
- *Fire Inspector: Principles and Practice Instructor's ToolKit* CD-ROM  
(International Association of Fire Chiefs, Cdr edition, Jones & Bartlett Learning, ISBN: 9781284095654)

#### Online Instructor Resources

The following instructor resources are available online at

<http://osfm.fire.ca.gov/training/resources>:

- Activity 3-1: Complex Complaints
- Activity 4-1: Modifications to Jurisdictional Codes and Standards
- Course plan
- Website

#### Student Resources

To participate in this course, students need:

- California Fire Code  
(International Code Council, current edition)

## Fire Inspector 2A

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Reference manual options:

- *Fire Inspection and Code Enforcement*  
(IFSTA, 8th edition, ISBN: 9780879396053)

Or

- *Fire Inspector: Principles and Practice*  
(International Association of Fire Chiefs, Revised Enhanced 1st edition, ISBN: 9780763798574)

DRAFT

### Unit 1: Introduction

#### Topic 1-1: Orientation and Administration

##### Terminal Learning Objective

At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, resources, evaluation methods, and participation requirements in the course syllabus.

##### Enabling Learning Objectives

1. Identify facility requirements
  - Restroom locations
  - Food locations
  - Smoking locations
  - Emergency procedures
2. Identify classroom requirements
  - Start and end times
  - Breaks
  - Electronic device policies
  - Special needs and accommodations
  - Other requirements as applicable
3. Review course syllabus
  - Course objectives
  - Calendar of events
  - Course requirements
  - Student evaluation process
  - Assignments
  - Activities
  - Required student resources
  - Class participation requirements

##### Discussion Questions

1. What is a formative test? What is a summative test?

##### Activities

1. To be determined by the instructor.

#### Topic 1-2: Fire Marshal Certification Process

##### Terminal Learning Objective

At the end of this topic, a student will be able to identify different levels in the Fire Marshal certification track, the courses and requirements for Fire Inspector 2 certification, and be able to describe the capstone task book and testing process.

##### Enabling Learning Objectives

1. Identify the different levels of certification in the Fire Inspector certification track
  - Fire Inspector 1

## Fire Inspector 2A

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- Fire Inspector 2
2. Identify the other Fire Prevention certification tracks
  - Plan Examiner
  - Fire Marshal
3. Identify the courses required for Fire Inspector 2
  - Fire Inspector 2A: Fire Prevention Administration
  - Fire Inspector 2B: Fire and Life Safety Requirements
  - Fire Inspector 2C: Fire and Life Safety Systems and Equipment Inspections
  - Fire Inspector 2D: Hazardous Materials, Operations, and Processes
4. Identify any other requirements for Fire Inspector 2
5. Describe the capstone task book process
  - Complete all prerequisites and course work
  - Submit application and fees to request capstone task book
    - Must be employed by a California Fire Agency as a Fire Inspector
  - Complete all job performance requirements included in the task book
  - Must have identified evaluator verify individual task completion via signature
  - Must have Fire Chief or authorized representative verify task book completion via signature
6. Describe the capstone testing process
  - Complete coursework
  - Schedule online capstone test
  - Schedule skills evaluation test

### Discussion Questions

1. How many levels are there in the Fire Marshal certification track? What are they?

### Activities

1. To be determined by the instructor.

## Topic 1-3: Definition of Duties

### Terminal Learning Objective

At the end of this topic, a student given Sections 5.2, 5.3, 5.4, 6.2, and 6.3 of NFPA 1031 (2014) will be able to identify the administrative, field inspection, and plan review duties of a Fire Inspector 2 on a summative exam.

### Enabling Learning Objectives

1. Identify the administrative duties of a Fire Inspector 2
  - Conducting research
  - Interpreting codes
  - Implementing policy
  - Testifying at legal proceedings
  - Creating forms and job aids
  - Recommending, creating, and evaluating policies and procedures for life safety inspections and code enforcement activities

2. Identify the field inspection duties of a Fire Inspector 2
  - Conducting code enforcement inspections
  - Analyzing new and existing structures and properties for construction, occupancy, fire protection, and exposures
  - Analyzing code compliance alternatives
  - Evaluating construction, occupancy, fire protection, and exposures
  - Evaluating emergency planning services
3. Identify the plan review duties of a Fire Inspector 2
  - Field verifying shop drawings, plans and construction documents to ensure that they meet the intent of applicable codes and standards for fire and life safety
4. Describe how one's ethics and core values impact the work environment, including:
  - Code enforcement
  - Gifts and gratuities
  - Professional decorum

### Discussion Questions

1. What are the jurisdictional organizations that require inspectors to conduct inspections?
2. What ethics-related situations have you encountered as a fire inspector?

### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 1-1

## Unit 2: Processing Permit & Plan Review Applications

### Topic 2-1: Processing Permit Applications

#### Terminal Learning Objective

At the end of this topic, a student, given a specific request, will be able to evaluate and process a permit application to issue or deny a permit in accordance with applicable codes and standards and jurisdictional policies.

#### Enabling Learning Objectives

1. Describe the permit application process
  - Collecting fees or charges
  - Tracking documentaton
  - Verifying application is complete
  - Verifying license and worker's compensation information
2. Identify applicable codes, standards, policies, and procedures of the jurisdiction

#### Discussion Questions

1. What are the components of a construction permit?

#### Activities

1. Given a scenario and a sample permit application, complete a permit application.

**CTS Guide Reference:** CTS 2-1

### Topic 2-2: Enforcing Permit Regulations

#### Terminal Learning Objective

At the end of this topic, a student, given a permit application or report of a violation, applicable codes and standards, and policies of the jurisdiction, will be able to enforce permit regulations in accordance with applicable codes and standards and jurisdictional policies and mitigate violations.

#### Enabling Learning Objectives

1. Describe legal authority for permit issuance and revocation
2. Describe enforcing permit regulations, including:
  - Visiting the permit activity site
  - Comparing permit to actual activity
  - Identifying and documenting discrepancies
  - Notifying responsible parties
  - Identifying deficiency resolution options
  - Verifying compliance
  - Issuing stop work notice if necessary
  - Revoking permit if necessary
3. Identify applicable codes and standards adopted by the jurisdiction
4. Make decisions about permit violations and communicate as necessary to enforce permit regulations
5. Evaluate consequences of improper enforcement

#### Discussion Questions

1. When would an inspector visit a permit activity site?
2. When would an inspector issue a stop work notice?

#### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 2-8

### Topic 2-3: Processing Plan Review Applications

#### Terminal Learning Objective

At the end of this topic, a student, given a specific request, will be able to evaluate and process a plan review application in accordance with applicable codes and standards and jurisdictional policies.

#### Enabling Learning Objectives

1. Describe the plan review application process
  - Collecting fees or charges
  - Tracking documentation
  - Verifying application is complete
  - Verifying that all necessary plan views and documentation are included
2. Discuss the code requirements of the jurisdiction
3. Identify the policies and procedures of the jurisdiction

- Legal authority for plan review
4. Communicate orally and in writing on matters related to code requirements, policies, and procedures of the jurisdiction

### Discussion Questions

1. What are the different types of plan views?
2. What purpose do manufacturer's cut sheets serve?

### Activities

1. Given a plan review application accompanied by an incomplete set of plans and documents, have students compose correspondence informing the applicant of requirements per the jurisdictional code requirements, policies, and procedures.

**CTS Guide Reference:** CTS 2-2

## Unit 3: Complex Complaints

### Topic 3-1: Investigating Complex Complaints

#### Terminal Learning Objective

At the end of this topic, a student, given a reported situation or condition, will be able to investigate complex complaints in order to record complaint information, initiate the investigation process, and resolve the complaint in accordance with application codes and standards and jurisdictional policies.

#### Enabling Learning Objectives

1. Describe methods and procedures to record, validate, and resolve complex complaints
  - Documenting complaint
  - Reviewing related past files
  - Researching complaint topic
  - Conducting a field inspection
  - Recognizing the problem
  - Documenting findings
  - Identifying options for resolution
  - Referring to appropriate level or other agencies when necessary
2. Identify applicable codes, standards, and policies adopted by the jurisdiction
3. Discuss how political pressures impact complaint investigation and resolution
4. Interpret codes and standards as they apply to the resolution of a complex complaint
5. Recognize problems during the investigation of a complex complaint
6. Refer complaints to other agencies when required

#### Discussion Questions

1. What makes a complaint a complex complaint?
2. How might political pressure affect complaint investigation?

#### Activities

1. Activity 3-1: Complex Complaints



### Instructor Notes

1. At this professional level, the resolution of the complaint will depend heavily on the technical evaluation of the complaint and the selection of possible corrective actions. More than one solution might be available.

**CTS Guide Reference:** CTS 2-3

## Unit 4: Modification of Codes and Standards

### Topic 4-1: Recommending Modifications to Codes and Standards

#### Terminal Learning Objective

At the end of this topic, a student, given a fire safety issue, will be able to recommend modifications to the adopted codes and standards of the jurisdiction that address a problem, need, or deficiency.

#### Enabling Learning Objectives

1. Describe state statutes or local ordinances establishing or empowering the agency to adopt, enforce, and revise codes and standards
  - Health and Safety Code (Section 13143, 17921(b), and 17958.7)
  - California Administrative Code
2. Describe the legal instruments establishing or adopting codes and standards
3. Describe the development and adoption process for fire and life safety legislation or regulations
  - Publication of model code used in California by ICC
  - Review and modification by state agencies
  - Adoption by State Building Standards Commission
  - Review and modification by local agencies (during 180 day waiting period)
  - Adoption by local agency
4. Recognize problems with adopted codes and standards, and collect and develop potential solutions
5. Identify cost/risk benefits of modifying adopted codes and standards

#### Discussion Questions

1. Which state statutes give local agencies the authority to modify codes?
2. What fiscal impact might code modification have on a community?

#### Activities

1. Activity 4-1: Modifications to Jurisdictional Codes and Standards

**CTS Guide Reference:** CTS 2-4

### Unit 5: Policies, Procedures, & Processes for Inspection Services

#### Topic 5-1: Recommending Policies and Procedures for Inspection Services

##### Terminal Learning Objective

At the end of this topic, a student, given management objectives, will be able to recommend policies and procedures for delivering inspection services that are in accordance with jurisdictional policies and follow due process of the law.

##### Enabling Learning Objectives

1. Identify the policies and procedures of the jurisdiction related to code enforcement
  - Mandated inspection frequency
  - Follow-up visits
  - Timely response to complaints
2. Describe reasons why you might change a policy or procedure
  - Actual practices don't follow policy or procedure
  - A current policy or procedure creates another problem
  - A current policy or procedure is inefficient
  - Code changes
  - A policy or procedure addresses a problem that no longer exists
  - No policy or procedure exists to address a specific topic
  - A policy or procedure is adopted into a higher level code and no longer requires addressing at the local level
3. Describe how to recommend policies and procedures for delivering inspection services, including:
  - Identifying the reason or need for change
  - Conducting research in order to gather or create supporting documentation
  - Developing proposal
  - Drafting proposed policy or procedural change
  - Meeting with appropriate people for approval
  - Implementation if approved
4. Describe sources of detailed and technical information relating to fire protection and life safety
5. Educate supervisors in the need for new policies or procedures

##### Discussion Questions

1. What inspection-related policy or procedure would you change in your jurisdiction? Why?

##### Activities

1. Given an existing policy and possible reasons for change, have students break into small groups and write a sample policy change with justification.

**CTS Guide Reference:** CTS 2-5

### Topic 5-2: Generating Written Appeals Correspondence

#### Terminal Learning Objective

At the end of this topic, a student given a request for an appeal, will be able to generate written correspondence related to the issuance of appeals that clearly addresses the issue and is appropriate for the intended audience.

#### Enabling Learning Objectives

1. Identify the judicial review process for the jurisdiction
2. Describe the established appeals procedure for the jurisdiction
3. Identify the limitations of the appeals process, including:
  - Timeliness of the appeals process
  - Limited findings an appeals board may make
4. Interpret codes and standards and communicate requirements via written appeals correspondence
5. Evaluate requests for appeal and make decisions related to the appeals process
6. Issue written reports as required by jurisdictional appeals procedure

#### Discussion Questions

1. What is the judicial review process within your jurisdiction?
2. What is the appeals process in your jurisdiction?

#### Activities

1. Given a request for appeal, have students evaluate the request and generate written correspondence communicating their findings.

**CTS Guide Reference:** CTS 2-6

### Topic 5-3: Initiating Legal Action

#### Terminal Learning Objective

At the end of this topic, a student, given a description of a violation and a legal opinion, will be able to initiate legal action related to a fire code violation in accordance with jurisdictional policies and due process of the law.

#### Enabling Learning Objectives

1. Describe legal procedure for fire code enforcement
  - Determining when legal action is required
  - Evaluating jurisdictional options related to legal action
  - Issuing notice of legal action
  - Following the due process of the law
2. Discuss authority and limitations of police powers
3. Address legal action in accordance with the policies and procedures of the jurisdiction

#### Discussion Questions

1. When should an inspector initiate legal action against a business owner?
2. Who is your legal counsel within your department or district?

#### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 2-9

### Topic 5-4: Evaluating Inspection Reports

#### Terminal Learning Objective

At the end of this topic, a student, given applicable codes, standards, policies, and procedures of the jurisdiction, will be able to evaluate inspection reports and completed forms and checklists for correct, clear, and concise information.

#### Enabling Learning Objectives

1. Identify applicable codes and standards adopted by the jurisdiction and their interrelationships
2. Identify various sources for additional reference materials related to code enforcement
3. Describe how to evaluate completed inspection reports, forms, and checklists
  - Confirm that information is complete, correct, clear, and concise
4. Demonstrate familiarity with code-related research
5. Compare code requirements of a jurisdiction with prepared inspection reports
6. Provide corrective information or correction to subordinate's inspection reports where necessary

#### Discussion Questions

1. Why should an inspection report be complete, correct, clear, and concise?
2. Should someone other than the inspector review all inspection reports?

#### Activities

1. Given sample inspection forms, identify which are complete and what information might be missing.

**CTS Guide Reference:** CTS 2-10

## Unit 6: Technical Reference Material Acquisition

### Topic 6-1: Proposing Technical Reference Material Acquisition

#### Terminal Learning Objective

At the end of this topic, a student, given a scope of responsibility, budget limitations, and specific code-related issues, will be able to propose the acquisition of technical reference materials that meet specific needs.

#### Enabling Learning Objectives

1. Identify types and sources of publications, including:
  - Approval and listings guides
  - Codes and standards
  - Technical references
  - Electronic media
2. Recognize the need for materials
3. Identify correct materials for specific needs
  - Selecting nationally recognized standards
  - Ensuring applicability in California

## Fire Inspector 2A

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- Selecting the proper edition
  - Assessing value of the information reference provides versus alternate less expensive materials
  - Paper versus digital versions
4. Calculate budget impact of material acquisition
    - Initial costs
    - Recurring costs
    - Purchase/update schedule
  5. Make decisions regarding acquisition priorities

### Discussion Questions

1. Are paper versions or electronic versions of reference materials better?
2. How should these technical resources be made available to the public?

### Activities

1. Given a list of specific technical resources, develop an acquisition plan and budget proposal.

**CTS Guide Reference:** CTS 2-7

**Time Table**

Segment	Lecture Time	Activity Time	Total Unit Time
<b>Unit 1: Introduction</b>			
Topic 1-1: Orientation and Administration			
Lecture	00:30		
Activity 1-1: To be determined by instructor		00:00	
Topic 1-2: Fire Marshal Certification Process			
Lecture	00:30		
Activity 1-2: To be determined by instructor		00:00	
Topic 1-3: Definition of Duties			
Lecture	00:30		
Activity 1-3: To be determined by instructor		00:00	
<b>Unit 1 Totals</b>	<b>1:30</b>	<b>00:00</b>	<b>1:30</b>
<b>Unit 2: Processing Permit &amp; Plan Review Applications</b>			
Topic 2-1: Processing Permit Applications			
Lecture	00:30		
Activity 2-1: See suggested activity		00:30	
Topic 2-2: Enforcing Permit Regulations			
Lecture	00:30		
Activity 2-2: To be determined by instructor		00:00	
Topic 2-3: Processing Plan Review Applications			
Lecture	00:30		
Activity 2-3: See suggested activity		00:30	
<b>Unit 2 Totals</b>	<b>1:30</b>	<b>1:00</b>	<b>2:30</b>
<b>Unit 3: Complex Complaints</b>			
Topic 3-1: Investigating Complex Complaints			
Lecture	1:00		
Activity 3-1: Complex Complaints		00:30	
<b>Unit 3 Totals</b>	<b>1:00</b>	<b>00:30</b>	<b>1:30</b>
<b>Unit 4: Modification of Codes and Standards</b>			
Topic 4-1: Recommending Modifications to Codes and Standards			

## Fire Inspector 2A

Segment	Lecture Time	Activity Time	Total Unit Time
Lecture	1:30		
Activity 4-1: Modifications to Jurisdictional Codes and Standards		00:30	
<b>Unit 4 Totals</b>	<b>1:30</b>	<b>00:30</b>	<b>2:00</b>
<b>Unit 5: Policies, Procedures, and Processes for Inspection Services</b>			
Topic 5-1: Recommending Policies and Procedures for Inspection Services			
Lecture	1:30		
Activity 5-1: See suggested activity		00:30	
Topic 5-2: Generating Written Appeals Correspondence			
Lecture	1:00		
Activity 5-2: See suggested activity		1:00	
Topic 5-3: Initiating Legal Action			
Lecture	1:00		
Activity 5-3: To be determined by instructor		00:00	
Topic 5-4: Evaluating Inspection Reports			
Lecture	1:00		
Activity 5-4: See suggested activity		00:30	
<b>Unit 5 Totals</b>	<b>4:30</b>	<b>2:00</b>	<b>6:30</b>
<b>Unit 6: Technical Reference Material Acquisition</b>			
Topic 6-1: Proposing Technical Reference Material Acquisition			
Lecture	00:30		
Activity 6-1: See suggested activity		00:30	
<b>Unit 6 Totals</b>	<b>00:30</b>	<b>00:30</b>	<b>1:00</b>
<b>Lecture, Activity, and Unit Totals:</b>	<b>10:30</b>	<b>4:30</b>	<b>15:00</b>

### Course Totals

Segment Type	Time
Total Lecture Time (LT)	10:30
Total Activity Time (AT)	4:30
Total Testing Time (TT)	1:00
<b>Total Course Time</b>	<b>16:00</b>

## **Complex Complaints**

### **Activity 3-1**

**Format:** Individual

**Time Frame:** 00:30

#### **Description**

This activity provides students with an opportunity to practice complaint resolution.

#### **Materials**

- Activity sheet
- Pen or pencil

#### **Instructions**

1. Review the five complaints listed below.
2. Prioritize them in the order that you would address them.
3. Describe possible corrective actions for each complaint (more than one solution might be available).

#### **Complaints:**

- A. A resident calls and tells you that while shopping in a big box store, she noticed that several exits were blocked.

*Priority:* \_\_\_\_\_

*Corrective Action:*

- B. A resident of a condominium calls and complains about cars always parking in the fire lane.

*Priority:* \_\_\_\_\_

*Corrective Action:*



## Fire Inspector 2A

### Activity 3-1

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- C. The mayor of your community complains to the city manager that her neighbor's house is fire hazard because of the weeds and pack-rat-like conditions. The city manager calls you with the complaint.

*Priority:* \_\_\_\_\_

*Corrective Action:*

- D. A patron calls and complains that a night club he frequently visits is always overcrowded.

*Priority:* \_\_\_\_\_

*Corrective Action:*

- E. A patron calls and complaints that on more than one occasion, while waiting for a table in a popular restaurant, what appears to be a fire alarm key pad is always beeping.

*Priority:* \_\_\_\_\_

*Corrective Action:*

## Fire Inspector 2A

### Activity 4-1

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## Modifications to Jurisdictional Codes & Standards

### Activity 4-1

**Format:** Group

**Time Frame:** 00:30

#### Description

This activity provides students with an opportunity to recognize the impact that a modification to a jurisdictional code or standard might have on their fire department and surrounding community, and to practice the development of recommendations for such modifications.

#### Materials

- Activity sheet

#### Instructions

1. Break into groups of four to five people.
2. Pick a spokesperson to discuss your findings.

#### Step 1

Develop a sprinkler ordinance for all buildings 5,000 square feet or greater.

#### Step 2

Answer the following questions.

1. What financial impact(s) will this ordinance have on your community?
2. What impact(s) will this ordinance have the fire department?
  - a. Financial?
  - b. Staffing?
  - c. Political?
3. How will this ordinance benefit your community?
4. How will this ordinance benefit the fire department?



# Fire and Life Safety Requirements

## Course Plan

### Course Details

<b>Certification:</b>	Fire Inspector 2
<b>CTS Guide:</b>	Fire Inspector 2 Certification Training Standards Guide (2014)
<b>Description:</b>	This course provides students with a basic knowledge of fire and life safety requirements related to the roles and responsibilities of a Fire Inspector 2 including occupancy classification, egress elements, emergency plans and procedures, occupant loads, building construction and fire growth potential.
<b>Designed For:</b>	The certified Fire Inspector 1 advancing to the Fire Inspector 2 classification
<b>Prerequisites:</b>	Fire Inspector 2A: Fire Prevention Administration
<b>Standard:</b>	Complete all activities and formative tests. Complete all summative tests with a minimum score of 80%.
<b>Hours:</b>	Lecture: 16:30 Activities: 5:30 Testing: 02:00
<b>Hours (Total):</b>	24:00
<b>Maximum Class Size:</b>	30
<b>Instructor Level:</b>	Primary Instructor
<b>Instructor/Student Ratio:</b>	1:30
<b>Restrictions:</b>	None
<b>SFT Designation:</b>	CFSTES

### Required Resources

#### Instructor Resources

To teach this course, instructors need:

- California Building Code  
(International Code Council, current edition)
- California Code of Regulations (CCR) Title 19  
(Office of Administrative Law, <https://oal.ca.gov/>)
- California Fire Code  
(International Code Council, current edition)

Reference manual options:

- *Fire Inspection and Code Enforcement Instructor Resource Kit*  
(IFSTA, 8th edition)

Or the combination of the following:

- *Fire Inspector: Principles and Practice*  
(International Association of Fire Chiefs, Revised Enhanced 1st edition, Jones & Bartlett Learning, ISBN: 9781284137743)
- *Fire Inspector: Principles and Practice Instructor's ToolKit* CD-ROM  
(International Association of Fire Chiefs, Cdr edition, Jones & Bartlett Learning, ISBN: 9781284095654)

#### Online Instructor Resources

The following instructor resources are available online at <http://osfm.fire.ca.gov/training/resources>:

- Activity 5-1: Maximum Occupant Load
- Course plan
- Website

#### Student Resources

To participate in this course, students need:

- California Fire Code  
(International Code Council, current edition)

## Fire Inspector 2B

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Reference manual options:

- *Fire Inspection and Code Enforcement*  
(IFSTA, 8th edition, ISBN: 9780879396053)

Or

- *Fire Inspector: Principles and Practice*  
(International Association of Fire Chiefs, Revised Enhanced 1st edition, ISBN:  
9780763798574)



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### Unit 1: Introduction

#### Topic 1-1: Orientation and Administration

##### Terminal Learning Objective

At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, resources, evaluation methods, and participation requirements in the course syllabus.

##### Enabling Learning Objectives

1. Identify facility requirements
  - Restroom locations
  - Food locations
  - Smoking locations
  - Emergency procedures
2. Identify classroom requirements
  - Start and end times
  - Breaks
  - Electronic device policies
  - Special needs and accommodations
  - Other requirements as applicable
3. Review course syllabus
  - Course objectives
  - Calendar of events
  - Course requirements
  - Student evaluation process
  - Assignments
  - Activities
  - Required student resources
  - Class participation requirements

##### Discussion Questions

1. What is a formative test? What is a summative test?

##### Activities

1. To be determined by the instructor.

#### Topic 1-2: Fire Marshal Certification Process

##### Terminal Learning Objective

At the end of this topic, a student will be able to identify different levels in the Fire Marshal certification track, the courses and requirements for Fire Inspector 2 certification, and be able to describe the capstone task book and testing process.

##### Enabling Learning Objectives

1. Identify the different levels of certification in the Fire Inspector certification track
  - Fire Inspector 1

## Fire Inspector 2B

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- Fire Inspector 2
2. Identify the other Fire Prevention certification tracks
  - Plans Examiner
  - Fire Marshal
3. Identify the courses required for Fire Inspector 2
  - Fire Inspector 2A: Fire Prevention Administration
  - Fire Inspector 2B: Fire and Life Safety Requirements
  - Fire Inspector 2C: Fire and Life Safety Systems and Equipment Inspections
  - Fire Inspector 2D: Hazardous Materials, Operations, and Processes
4. Identify any other requirements for Fire Inspector 2
5. Describe the capstone task book process
  - Complete all prerequisites and course work
  - Submit application and fees to request capstone task book
    - Must be employed by a California Fire Agency as a Fire Inspector
  - Complete all job performance requirements included in the task book
  - Must have identified evaluator verify individual task completion via signature
  - Must have Fire Chief or authorized representative verify task book completion via signature
6. Describe the capstone testing process
  - Complete coursework
  - Schedule online capstone test
  - Schedule skills evaluation test

### Discussion Questions

1. How many levels are there in the Fire Marshal certification track? What are they?

### Activities

1. To be determined by the instructor.

## Unit 2: Occupancy Classification

### Topic 2-1: Classifying the Occupancy of a Building

#### Terminal Learning Objective

At the end of this topic, the student, given a set of plans, specifications, and a description of a building, will be able to classify the occupancy of a building in accordance with applicable codes and standards and jurisdictional policies.

#### Enabling Learning Objectives

1. Describe types of plan views and system plans
  - Site plan
  - Floor plan
  - Elevation
  - Sectional
  - Detailed

- System plan
2. Describe the systematic plan review process
    - Building size
    - Occupancy classification
    - Occupant load
    - Means of egress
    - Exit capacity
    - Building compartmentation
  3. Describe how to identify an occupancy classification from a set of plans
  4. Identify applicable codes, standards, and regulations
  5. Discuss how operational features may impact occupancy classification
  6. Identify fire hazards presented by various occupancies
  7. Read plans to determine occupancy classification

### Discussion Questions

1. What are the different types of plan views?
2. What types of operational features may change an occupancy classification?

### Activities

1. Using a set of plans, identify each plan view and its purpose.
2. Using a set of plans, identify the occupancy classification and means of egress for a building.

**CTS Guide Reference:** CTS 4-1

## Topic 2-2: Classifying Occupancy in a Mixed-Use Building

### Terminal Learning Objective

At the end of this topic, a student, given a description of a building's uses, will be able to identify the occupancy classification of a mixed-use building in accordance with applicable codes and standards.

### Enabling Learning Objectives

1. Describe the occupancy classification, applicable codes and standards, operational features, and fire hazards presented by various occupancies
2. Interpret code requirements and recognize building uses that fall into each occupancy classification

### Discussion Questions

1. How would you determine the occupancy classifications within a mixed-use building?

### Activities

1. Using a set of plans for a mixed-use building, identify the different occupancy classifications.

**CTS Guide Reference:** CTS 3-2



### Unit 3: Egress Elements

#### Topic 3-1: Verifying Means of Egress Elements

##### Terminal Learning Objective

At the end of this topic, a student, given a floor plan of a building or portion of a building, will be able to verify the provision of means of egress elements; identify and check elements against applicable codes and standards; and identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.

##### Enabling Learning Objectives

1. Identify applicable codes and standards adopted by the jurisdiction
2. Describe the standard symbols used in plans to denote means of egress
3. Discuss field verification practices used to confirm appropriate egress elements
4. Research codes and standards to verify means of egress elements

##### Discussion Questions

1. What are some of the standard symbols used in plans to denote means of egress?
2. During a field inspection, how should appropriate egress elements be verified?

##### Activities

1. Using a floor plan of a building or portion of a building, identify means of egress elements, check to ensure compliance with applicable codes and standards, and document any egress deficiencies noted.

**CTS Guide Reference:** CTS 4-5

#### Topic 3-2: Analyzing Egress Elements

##### Terminal Learning Objective

At the end of this topic, a student, given observations made during a field inspection, will be able to analyze the egress elements of a building or portion of a building to verify the provision and location of egress elements in accordance with applicable codes and standards and identify, document, and report deficiencies in accordance with jurisdictional policies.

##### Enabling Learning Objectives

1. Describe acceptable means of egress devices
2. Calculate egress requirements
3. Make decisions related to the adequacy of egress

##### Discussion Questions

1. What does California Fire Code identify as acceptable means of egress devices?

##### Activities

1. Using observations made during a field inspection, analyze the provision and location of egress elements and document deficiencies as necessary.

**CTS Guide Reference:** CTS 3-5

### Topic 3-3: Proposing Correction for Egress Deficiencies

#### Terminal Learning Objective

At the end of this topic, a student, given a list of means of egress deficiencies in a building and the proposed correction, will be able to evaluate each deficiency and its proposed correction for compliance with applicable codes and standards, and identify, document, and report deficiencies in accordance with jurisdictional policies.

#### Enabling Learning Objectives

1. Identify applicable codes and standards adopted by the jurisdiction
2. Describe impact of occupancy requirements on egress deficiencies
3. Describe means of egress requirements for a building or portion of a building
4. Read and analyze plans and performance-based reports
5. Interpret codes and standards related to egress deficiencies and make decisions regarding correction

#### Discussion Questions

1. What are some common egress violations?

#### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 3-14

## Unit 4: Emergency Plans and Procedures

### Topic 4-1: Recommending Criteria for Developing Emergency Plans and Procedures

#### Terminal Learning Objective

At the end of this topic, a student, given a description of a building and its use, will be able to recommend criteria for developing emergency planning and procedures in accordance with applicable codes and standards and jurisdictional policies.

#### Enabling Learning Objectives

1. Identify applicable codes and standards adopted by the jurisdiction
2. Identify occupancies that require emergency evacuation plans
3. Discuss the purpose, use, and applicability of evacuation plans
4. Identify information sources and recommend criteria for emergency evacuation plans
  - California Fire Code
  - CCR Title 19
  - NFPA 101
  - Joint Commission on Accreditation of Hospitals (hospitals only)
5. Describe human behavior during fires and other emergencies
6. Read emergency plans and reports
7. Evaluate emergency planning and procedures, including:
  - Emergency shutdown systems
  - Lock-down procedures

- Other egress procedures
8. Recognize problems with emergency plans and procedures

### Discussion Questions

1. What is the role of an AHJ in the development of an evacuation plan?
2. What are some acceptable locations for an evacuation area?

### Activities

1. Evaluate a sample evacuation plan.

**CTS Guide Reference:** CTS 3-18

## Topic 4-2: Evaluating Emergency Planning and Preparedness Procedures

### Terminal Learning Objective

At the end of this topic, a student, given existing or proposed plans and procedures and applicable codes and standards, will be able to evaluate emergency planning and preparedness procedures to determine compliance.

### Enabling Learning Objectives

1. Describe the occupancy requirements for emergency evacuation plans
2. Describe fire safety programs for crowd control
3. Identify the roles of agencies and individuals in implementation and development of emergency plans
4. Describe how to evaluate emergency planning and preparedness procedures to determine applicability to the facility
5. Compare submitted plans and procedures with applicable codes and standards adopted by the jurisdiction

### Discussion Questions

1. What types of occupancy require an emergency evacuation plan?
2. What type of occupancy would "shelter in place" be applicable?

### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 3-7

## Unit 5: Occupant Loads

### Topic 5-1: Computing Maximum Allowable Occupancy Loads

#### Terminal Learning Objective

At the end of this topic, a student, given a floor plan of a building or portion of a building, will be able to compute the maximum allowable occupant load of a building or portion of the building in accordance with applicable codes and standards and jurisdictional policies.

#### Enabling Learning Objectives

1. Describe how to calculate occupant loads for an occupancy and building use
2. Identify codes, requirements, and regulations
3. Discuss how operational features such as fixed seating impact occupant load
4. Identify fire hazards presented by various occupancies

5. Calculate accurate occupant loads
6. Identify occupancy factors related to various occupancy classifications
7. Use measuring tools, including a calculator, to compute maximum allowable occupancy loads

### Discussion Questions

1. How does fixed seating impact occupant load?
2. What are the different types of fire hazards presented by various occupancies?

### Activities

1. Activity 5-1: Maximum Occupant Load

**CTS Guide Reference:** CTS 4-2

## Topic 5-2: Computing the Maximum Occupant Load of a Multi-Use Building

### Terminal Learning Objective

At the end of this topic, a student, given field observations or a description of a building's uses, will be able to compute the maximum allowable occupant load of a multi-use building in accordance with applicable codes and standards.

### Enabling Learning Objectives

1. Describe how to calculate occupant loads for an occupancy and for building use
2. Describe code requirements, regulations, operational features, and fire hazards presented by various occupancies
3. Calculate occupant loads
4. Identify occupancy factors related to various occupancy classifications
5. Use measuring tools, including a calculator, to compute the maximum allowable occupant load of a multi-use building

### Discussion Questions

1. When computing occupant load, what types of information need to be considered?
2. Can you allow the number of occupants to exceed the maximum occupant load?

### Activities

1. Using a set of plans for a multi-use building, compute the maximum allowable occupant load.

**CTS Guide Reference:** CTS 3-1

## Topic 5-3: Assessing Alternative Methods to Adjust Occupant Loads

### Terminal Learning Objective

At the end of this topic, a student, given a description of an area, building, or portion of a building and its intended use, will be able to assess alternative methods to adjust occupant loads to keep the occupant load in accordance with applicable codes and standards.

### Enabling Learning Objectives

1. Identify applicable codes and standards adopted by the jurisdiction
2. Discuss occupancy requirements for adjusting occupant loads
3. Describe impact of egress requirements on alternative methods to adjust occupant loads

4. Describe how to evaluate evacuation plan procedures related to adjusted occupant loads
5. Read plans and reports, interpret codes and standards, and make decisions related to adjusting occupant loads
6. Analyze performance-based reports

### Discussion Questions

1. List alternative methods that can be used to allow for the adjustment of an occupant load.
2. How do evacuation plans impact occupant load?

### Activities

1. Using a description of an area, building, or portion of a building and its intended use, evaluate occupant load and recommend alternative methods to adjust occupant load.

**CTS Guide Reference:** CTS 3-13

## Unit 6: Building Construction

### Topic 6-1: Verifying Building Construction and Construction Type

#### Terminal Learning Objective

At the end of this topic, a student, given an approved set of plans, specifications, and construction features, will be able to evaluate a building's area, height, occupancy classification, and construction type to verify the building is in accordance with approved plans and applicable codes and standards.

#### Enabling Learning Objectives

1. Describe how to evaluate a building's area, height, and occupancy classification
2. Describe building construction with an emphasis on fire-rated construction
3. Identify approved construction methods and materials related to fire safety
4. Describe the concept of performance-based versus prescriptive design, including:
  - Materials testing
  - Technical analysis
  - Human-factor studies
  - Fire protection engineering principles
5. Describe how to evaluate and analyze construction methods and assemblies for fire rating using test results and manufacturer specifications, including:
  - Design/listing criteria, such as:
    - ASTM E119
    - ASTM E84
    - UL 5555
    - SFM 12-7A-2
6. Identify characteristics of each type of building construction and occupancy classification

#### Discussion Questions

1. What is performance-based design?
2. What are the construction characteristics of a Type II building?

3. What types of materials would be used in the construction of a Type I building?

### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 3-3 and 4-6

## Topic 6-2: Evaluating Construction Type of an Addition or Remodel

### Terminal Learning Objective

At the end of this topic, a student, given a description of a building and its use, will be able to evaluate the construction type required for an addition or remodeling project based on applicable codes and standards, and identify, document, and report deficiencies in accordance with jurisdictional policies.

### Enabling Learning Objectives

1. Identify policies, procedures, and applicable codes and standards adopted by the jurisdiction
2. Describe the impact of occupancy requirements on construction type
3. Describe construction methods
4. Describe building construction features required in a wildland urban interface environment, including:
  - Ignition-resistant construction
  - Roofing
  - Vents
  - Exterior coverings
  - Exterior doors and windows
  - Decking
  - Ancillary structures
5. Recognize problems with the construction type of an addition or remodel project
6. Read reports and plans as necessary to evaluate construction type
7. Describe the procedures for resolving deficiencies, including:
  - Identifying deficiencies
  - Referencing applicable codes and standards
  - Documenting deficiencies
  - Reporting a summary of deficiencies
  - Verifying corrective actions
  - Identifying alternate methods and materials for compliance

### Discussion Questions

1. Why do structures in the wildland urban interface environment require different construction features?
2. How do you resolve deficiencies identified in plan review?

### Activities

1. Given pictures of structures in a wildland urban interface, identify compliant and non-compliant construction features.

CTS Guide Reference: CTS 3-15

### Unit 7: Fire Growth Potential

#### Topic 7-1: Determining Fire Growth Potential

##### Terminal Learning Objective

At the end of this topic, a student, given field observations or plans, will be able to determine fire growth potential in a building or space by evaluating the contents, interior finishes and construction elements for compliance, and to identify, document, and correct deficiencies in accordance with applicable codes and standards and jurisdictional policies.

##### Enabling Learning Objectives

1. Describe flame spread and smoke development ratings of:
  - Contents
  - Interior finishes
  - Building construction elements
  - Decorations
  - Decorative materials
  - Furnishings
2. Describe factors related to fire growth potential:
  - Heat content of the materials involved
  - Exposed surface area
  - Material height and array
  - Continuity of combustible materials within a space
  - Ceiling height
  - Ventilation or openness of the space
3. Describe factors related to the fire growth potential of high piled combustible storage
4. Describe how to determine compliance of and communicate deficiencies in building contents, interior finish, and construction elements
5. Describe how to identify, document, verify, and report or resolve deficiencies
6. Discuss safe housekeeping practices
7. Interpret codes and standards
8. Recognize hazardous conditions and make decisions regarding corrections

##### Discussion Questions

1. What are some factors that help determine fuel load?
2. What impact would open windows have on a fire?
3. How does ceiling height/shape impact fire growth?
4. What is high piled combustible storage?

##### Activities

1. Given a set of NIST (National Institute of Standards and Technology) fire reports, discuss different factors that impact fires.

CTS Guide Reference: CTS 3-10

**Time Table**

Segment	Lecture Time	Activity Time	Total Unit Time
<b>Unit 1: Introduction</b>			
Topic 1-1: Orientation and Administration			
Lecture	00:30		
Activity 1-1: To be determined by instructor		00:00	
Topic 1-2: Fire Marshal Certification Process			
Lecture	00:30		
Activity 1-2: To be determined by instructor		00:00	
<b>Unit 1 Totals</b>	<b>1:00</b>	<b>00:00</b>	<b>1:00</b>
<b>Unit 2: Occupancy Classification</b>			
Topic 2-1: Classifying the Occupancy of a Building			
Lecture	2:00		
Activity 2-1: See suggested activities		00:30	
Topic 2-2: Classifying Occupancy in a Mixed-Use Building			
Lecture	00:30		
Activity 2-2: See suggested activity		00:30	
<b>Unit 2 Totals</b>	<b>2:30</b>	<b>1:00</b>	<b>4:00</b>
<b>Unit 3: Egress Elements</b>			
Topic 3-1: Verifying Means of Egress Elements			
Lecture	1:00		
Activity 3-1: See suggested activity		00:30	
Topic 3-2: Analyzing Egress Elements			
Lecture	00:30		
Activity 3-2: See suggested activity		00:30	
Topic 3-3: Proposing Correction for Egress Deficiencies			
Lecture	1:00		
Activity 3-3: To be determined by instructor		00:00	
<b>Unit 3 Totals</b>	<b>2:30</b>	<b>1:00</b>	<b>3:30</b>
<b>Unit 4: Emergency Plans and Procedures</b>			
Topic 4-1: Recommending Criteria for Developing Emergency Plans and Procedures			
Lecture	2:00		



## Fire Inspector 2B

Segment	Lecture Time	Activity Time	Total Unit Time
Activity 4-1: See suggested activity		00:30	
Topic 4-2: Evaluating Emergency Planning and Preparedness Procedures			
Lecture	1:00		
Activity 4-2: To be determined by instructor		00:00	
<b>Unit 4 Totals</b>	<b>3:00</b>	<b>00:30</b>	<b>3:30</b>
<b>Unit 5: Occupant Loads</b>			
Topic 5-1: Computing Maximum Allowable Occupancy Loads			
Lecture	1:30		
Activity 5-1: Maximum Occupant Load		00:30	
Topic 5-2: Computing the Maximum Occupant Load of a Multi-Use Building			
Lecture	00:30		
Activity 5-2: See suggested activity		00:30	
Topic 5-3: Assessing Alternative Methods to Adjust Occupant Loads			
Lecture	1:00		
Activity 5-3: See suggested activity		00:30	
<b>Unit 3 Totals</b>	<b>3:00</b>	<b>1:30</b>	<b>4:30</b>
<b>Unit 6: Building Construction</b>			
Topic 6-1: Verifying Building Construction and Construction Type			
Lecture	1:30		
Activity 6-1: To be determined by instructor		00:00	
Topic 6-2: Evaluating Construction Type of an Addition or Remodel			
Lecture	1:00		
Activity 6-2: See suggested activity		00:30	
<b>Unit 6 Totals</b>	<b>2:00</b>	<b>00:30</b>	<b>2:30</b>
<b>Unit 7: Fire Growth Potential</b>			
Topic 7-1: Determining Fire Growth Potential			
Lecture	2:30		
Activity 7-1: See suggested activity		1:00	
<b>Unit 7 Totals</b>	<b>2:30</b>	<b>1:00</b>	<b>3:30</b>
<b>Lecture, Activity, and Unit Totals:</b>	<b>16:30</b>	<b>5:30</b>	<b>22:00</b>

### Course Totals

<b>Segment Type</b>	<b>Time</b>
Total Lecture Time (LT)	16:30
Total Activity Time (AT)	5:30
Total Testing Time (TT)	2:00
<b>Total Course Time</b>	<b>24:00</b>

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## Occupant Load

### Activity 5-1

**Format:** Individual

**Time Frame:** 00:30

### Description

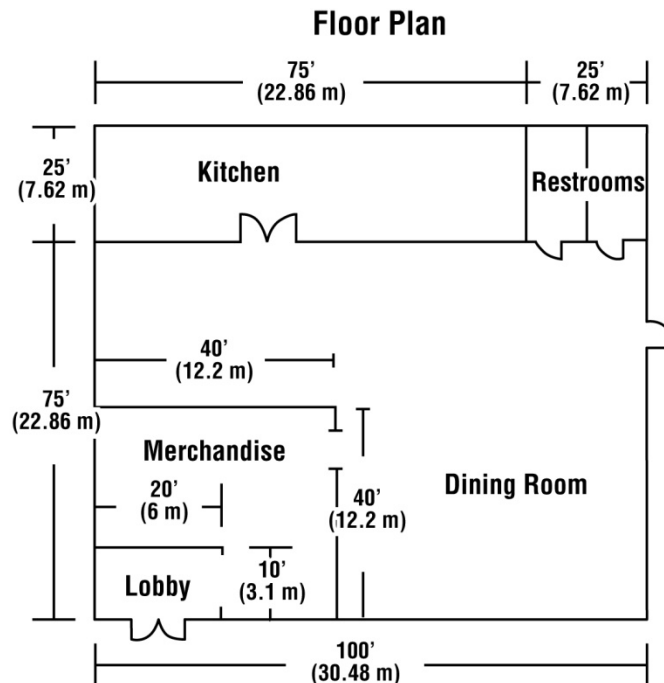
The term *occupant load* refers to the total number of persons who may occupy a building or a portion of it at any one time. For purposes of fire and life safety, inspectors must be able to determine the occupant load of existing occupancies during field inspections. This activity provides students with an opportunity to calculate occupant load.

### Materials

- Activity sheet
- Pen or pencil

### Instructions

1. Study the restaurant floor plan below.
2. Answer the questions regarding occupant load that follow.



# Fire Inspector 2B

## Activity 5-1

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#	Question	Answer
1.	What is the occupant load of the kitchen?	
2.	What is the occupant load of the dining room?	<hr/>
3.	What is the occupant load of the lobby?	<hr/>
4.	What is the occupant load of the merchandise area?	<hr/>
5.	What is the occupant load of the entire building?	<hr/> <hr/>



# Inspecting New and Existing Fire and Life Safety Systems and Equipment

## Course Plan

### Course Details

<b>Certification:</b>	Fire Inspector 2
<b>CTS Guide:</b>	Fire Inspector 2 Certification Training Standards Guide (2014)
<b>Description:</b>	This course provides students with a basic knowledge of inspection requirements related to the roles and responsibilities of a Fire Inspector 2 including inspection of life safety systems and building services equipment, fire protection systems, and emergency access criteria.
<b>Designed For:</b>	The certified Fire Inspector 1 advancing to the Fire Inspector 2 classification
<b>Prerequisites:</b>	Fire Inspector 2A: Fire Prevention Administration
<b>Standard:</b>	Complete all activities and formative tests. Complete all summative tests with a minimum score of 80%.
<b>Hours:</b>	Lecture: 22:30 Activities: 00:30 Testing: 1:00
<b>Hours (Total):</b>	24:00
<b>Maximum Class Size:</b>	30
<b>Instructor Level:</b>	Primary Instructor
<b>Instructor/Student Ratio:</b>	1:30
<b>Restrictions:</b>	None
<b>SFT Designation:</b>	CFSTES

### Required Resources

#### Instructor Resources

To teach this course, instructors need:

- California Building Code  
(International Code Council, current edition)
- California Code of Regulations (CCR) Title 19  
(Office of Administrative Law, <https://oal.ca.gov/>)
- California Fire Code  
(International Code Council, current edition)

Reference manual options:

- *Fire Inspection and Code Enforcement Instructor Resource Kit*  
(IFSTA, 8th edition)

Or the combination of the following:

- *Fire Inspector: Principles and Practice*  
(International Association of Fire Chiefs, Revised Enhanced 1st edition, Jones & Bartlett Learning, ISBN: 9781284137743)
- *Fire Inspector: Principles and Practice Instructor's ToolKit* CD-ROM  
(International Association of Fire Chiefs, Cdr edition, Jones & Bartlett Learning, ISBN: 9781284095654)

#### Online Instructor Resources

The following instructor resources are available online at <http://osfm.fire.ca.gov/training/resources>:

- Course plan
- Website

#### Student Resources

To participate in this course, students need:

- California Fire Code  
(International Code Council, current edition)

Reference manual options:

- *Fire Inspection and Code Enforcement*  
(IFSTA, 8th edition, ISBN: 9780879396053)

Or

- *Fire Inspector: Principles and Practice*  
(International Association of Fire Chiefs, Revised Enhanced 1st edition, ISBN: 9780763798574)

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### Unit 1: Introduction

#### Topic 1-1: Orientation and Administration

##### Terminal Learning Objective

At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, resources, evaluation methods, and participation requirements in the course syllabus.

##### Enabling Learning Objectives

1. Identify facility requirements
  - Restroom locations
  - Food locations
  - Smoking locations
  - Emergency procedures
2. Identify classroom requirements
  - Start and end times
  - Breaks
  - Electronic device policies
  - Special needs and accommodations
  - Other requirements as applicable
3. Review course syllabus
  - Course objectives
  - Calendar of events
  - Course requirements
  - Student evaluation process
  - Assignments
  - Activities
  - Required student resources
  - Class participation requirements

##### Discussion Questions

1. What is a formative test? What is a summative test?

##### Activities

1. To be determined by the instructor.

#### Topic 1-2: Fire Marshal Certification Process

##### Terminal Learning Objective

At the end of this topic, a student will be able to identify different levels in the Fire Marshal certification track, the courses and requirements for Fire Inspector 2 certification, and be able to describe the capstone task book and testing process.

##### Enabling Learning Objectives

1. Identify the different levels of certification in the Fire Inspector certification track
  - Fire Inspector 1



## Fire Inspector 2C

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- Fire Inspector 2
- 2. Identify the other Fire Prevention certification tracks
  - Plans Examiner
  - Fire Marshal
- 3. Identify the courses required for Fire Inspector 2
  - Fire Inspector 2A: Fire Prevention Administration
  - Fire Inspector 2B: Fire and Life Safety Requirements
  - Fire Inspector 2C: Fire and Life Safety Systems and Equipment Inspections
  - Fire Inspector 2D: Hazardous Materials, Operations, and Processes
- 4. Identify any other requirements for Fire Inspector 2
- 5. Describe the capstone task book process
  - Complete all prerequisites and course work
  - Submit application and fees to request capstone task book
    - Must be employed by a California Fire Agency as a Fire Inspector
  - Complete all job performance requirements included in the task book
  - Must have identified evaluator verify individual task completion via signature
  - Must have Fire Chief or authorized representative verify task book completion via signature
- 6. Describe the capstone testing process
  - Complete coursework
  - Schedule online capstone test
  - Schedule skills evaluation test

### Discussion Questions

1. How many levels are there in the Fire Marshal certification track? What are they?

### Activities

1. To be determined by the instructor.

## Unit 2: Life Safety Systems and Building Services Equipment

### Topic 2-1: Evaluating Fire, Life Safety, and Property Protection Equipment

#### Terminal Learning Objective

At the end of this course, a student, given field observations of the facility and documentation, the hazards protected, and system specifications, will be able to evaluate fire protection systems and equipment provided for life safety and property protection to approve them for the protected occupancy or hazard.

#### Enabling Learning Objectives

1. Identify applicable codes and standards for fire protection systems
2. Discuss basic physical science as it relates to fire behavior and fire suppression
3. Discuss implications and hazards associated with system operation
4. Describe installation techniques and acceptance inspection
5. Describe testing and reports of maintenance of completed installations
6. Describe the use and function of various systems

7. Recognize problems with fire protection systems and equipment
8. Use codes and standards to evaluate fire protection systems and equipment
9. Read reports, plans, and specifications to determine whether life safety and property protection measures are appropriate for the protected occupancies or hazards

### Discussion Questions

1. What kind of hazards might be associated with a clean-agent system?
2. What are the key elements of an acceptance inspection?

### Activities

1. To be determined by the instructor.

### Instructor Notes

1. This Terminal Learning Objective includes buildings under construction or demolition. Building documentation includes performance-based design documents to ensure input features remain applicable to the building as it is currently configured. The design documentation should include an Operations and Maintenance Manual, which acts as a user guide to the performance-based design. The Operations and Maintenance Manual includes the assumptions and estimates made during the design regarding concepts such as selected fire scenarios and fuel loads, building use, occupant characteristics, and system reliability. The inspector should be able to compare these original assumptions and estimates to those that would be used to evaluate the building as it is currently configured.

**CTS Guide Reference:** CTS 3-4

## Topic 2-2: Verifying Code Compliance of Building Service Equipment and Operations

### Terminal Learning Objective

At the end of this topic, a student, given field observations, will be able to verify code compliance of heating, ventilation, air conditioning, and other building service equipment and operations to verify maintenance in accordance with applicable codes and standards and identify, document, and report deficiencies in accordance with jurisdictional policies.

### Enabling Learning Objectives

1. Describe types, installation, maintenance, and use of building service equipment
  - Lighting
  - Heating, ventilating and air conditioning
  - Elevators and escalators
2. Describe the operation of smoke and heat vents
3. Describe the installation of kitchen cooking equipment (including hoods and ducts), laundry chutes, elevators, and escalators
4. Identify applicable codes and standards adopted by the jurisdiction
5. Observe and recognize problems with HVAC and other building service equipment and operations
6. Interpret codes and standards related to building services equipment and write reports to document deficiencies

### Discussion Questions

1. What are the operating principles of heat or smoke vents?
2. What deficiencies might you find when reviewing kitchen cooking equipment for code compliance?

### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 3-12

## Topic 2-3: Verifying Installation, Inspection, and Testing of Life Safety Systems and Building Services Equipment

### Terminal Learning Objective

At the end of this topic, a student, given a performance-based design, will be able to verify that life safety systems and building services equipment are installed, inspected, and tested to perform as described in the engineering documents and the operations and maintenance manual that accompanies the design to identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.

### Enabling Learning Objectives

1. Describe applicable codes and standards for installation and testing of fire protection systems
  - Water based extinguishing system
  - Special agent system
  - Fire detection and alarm system
2. Describe how to verify that means of egress are installed, inspected, and tested as designed
3. Describe how to verify that building services equipment is installed, inspected, and tested as designed
  - Lighting
  - Heating, ventilating and air conditioning
  - Elevators and escalators
4. Witness and document tests of fire protection systems and building services equipment
  - Identify, document, and report deficiencies

### Discussion Questions

1. How is an HVAC system utilized for fire control?
2. In a mixed-use occupancy, do all the occupancies require a fire alarm system?

### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 3-11

### Topic 2-4: Evaluating Compliance of Life Safety Systems and Building Services Equipment with Construction Documents

#### Terminal Learning Objective

At the end of this topic, a student, given a performance-based design, will be able to evaluate compliance with construction documents to ensure after installation, inspection, and testing, that life safety systems and building services equipment perform as described in the engineering documents and the operations and maintenance manual that accompanies the design; and to identify, document, and report deficiencies in accordance with the policies of the jurisdiction.

#### Enabling Learning Objectives

1. Identify applicable codes and standards for installation and testing of
  - Fire protection systems
  - Life safety systems
  - Building services equipment
2. Witness and document tests of fire protection systems and building services equipment
  - Identify, document, and report deficiencies

#### Discussion Questions

1. What construction documents would you utilize when evaluating the compliance of building services equipment, fire protection systems, and life safety systems?
2. What information can be obtained from an operations and maintenance manual to assist in evaluating various life safety systems?

#### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 3-23

## Unit 3: Fire Protection Systems

### Topic 3-1: Reviewing Proposed Installation of Fire Protection Systems

#### Terminal Learning Objective

At the end of this topic, a student, given shop drawings and system specifications for a process or operation, will be able to review the proposed installation of fire protection systems for code compliance and installation in accordance with the approved drawings, and identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.

#### Enabling Learning Objectives

1. Describe proper selection, distribution, location, and testing of portable fire extinguishers
2. Discuss methods used to evaluate the operational readiness of water supply systems used for fire protection
3. Describe the evaluation and testing of automatic sprinkler, water spray, and standpipe systems and fire pumps

4. Describe the evaluation and testing of fixed fire suppression systems
5. Describe the evaluation and testing of automatic fire detection and alarm systems and devices
6. Read basic floor plans or shop drawings and identify symbols used by the jurisdiction
7. Review the proposed installation of fire protection systems for compliance, and identify, document, and report deficiencies

### Discussion Questions

1. What type of extinguisher should be identified for use in a B occupancy?
2. What are the minimum spacing requirements for fire extinguishers?

### Activities

1. Given a set of plans, verify the proper selection, distribution, and location of portable fire extinguishers for a given occupancy.

### Instructor Notes

1. The Fire Inspector 2 is expected to be able to evaluate proposed fire protection systems and equipment for moderately technical applications. Knowledge of the compatibility and effectiveness of the protection systems and equipment with the hazard to be protected is essential.

**CTS Guide Reference:** CTS 4-3

## Topic 3-2: Reviewing Installed Fire Protection Systems

### Terminal Learning Objective

At the end of this topic, a student, given an installed system, shop drawings, and system specifications for a process or operation, will be able to verify that the fire protection systems are installed in compliance with code and in accordance with the approved drawings, and identify, document, and report deficiencies in accordance with applicable codes, standards, and jurisdictional policies.

### Enabling Learning Objectives

1. Review an installed fire protection system for compliance, and identify, document, and report deficiencies

### Discussion Questions

1. When reviewing an installed fire protection system for compliance, what system components should be identified and documented?

### Activities

1. To be determined by the instructor.

### Instructor Notes

1. This topic may be taught in conjunction with Topic 3-1: Reviewing Proposed Installation of Fire Protection Systems.

**CTS Guide Reference:** CTS 4-4

### Topic 3-3: Witnessing an Acceptance Test for an Integrated Fire Protection System

#### Terminal Learning Objective

At the end of this topic, a student, given approved shop drawings, test protocols, and an installed system, will be able to witness an acceptance test for an integrated fire protection system to evaluate for compliance, and identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.

#### Enabling Learning Objectives

1. Describe acceptance test procedures
  - Contractors pre- test documentation
  - Test criteria from codes and standards
  - Other specific test criteria as might be developed by the system designer
2. Identify applicable codes and standards for acceptance testing:
  - Elevator recall upon activation of a fixed fire alarm system
  - Activation and operation of a smoke removal (HVAC) system
  - Other integrated fire protection systems of a similar nature in a structure
3. Supervise the performance of acceptance tests
  - Identify, document, and report deficiencies

#### Discussion Questions

1. What steps are involved in an acceptance test?

#### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 3-21

## Unit 4: Emergency Access Criteria

### Topic 4-1: Developing Emergency Access Criteria

#### Terminal Learning Objective

At the end of this topic, a student, given the jurisdiction's emergency fire apparatus and fire suppression practices, will be able to develop emergency access criteria to deliver fire suppression services in accordance with jurisdictional policies.

#### Enabling Learning Objectives

1. Discuss emergency access and accessibility requirements of the jurisdiction
2. Describe the performance specifications related to access of emergency vehicles of the jurisdiction
3. Identify emergency access requirements contained in the applicable codes and standards
4. Make decisions as required to develop emergency access criteria
5. Use measuring tools to evaluate emergency fire apparatus for use in planning emergency access criteria

### Discussion Questions

1. When developing emergency access criteria, what types of site accessibility requirements should be considered?
2. What type of emergency access requirements should be developed for buildings under construction?

### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 3-22

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**Time Table**

Segment	Lecture Time	Activity Time	Total Unit Time
<b>Unit 1: Introduction</b>			
Topic 1-1: Orientation and Administration			
Lecture	00:30		
Activity 1-1: To be determined by instructor		00:00	
Topic 1-2: Fire Marshal Certification Process			
Lecture	00:30		
Activity 1-2: To be determined by instructor		00:00	
<b>Unit 1 Totals</b>	<b>1:00</b>	<b>00:00</b>	<b>1:00</b>
<b>Unit 2: Life Safety Systems and Building Services Equipment</b>			
Topic 2-1: Evaluating Fire, Life Safety, and Property Protection Equipment			
Lecture	2:00		
Activity 2-1: To be determined by instructor		00:00	
Topic 2-2: Verifying Code Compliance of Building Service Equipment and Operations			
Lecture	2:00		
Activity 2-2: To be determined by instructor		00:00	
Topic 2-3: Verifying Installation, Inspection, and Testing of Life Safety Systems and Building Services Equipment			
Lecture	2:00		
Activity 2-3: To be determined by instructor		00:00	
Topic 2-4: Evaluating Compliance of Life Safety Systems and Building Services Equipment with Construction Documents			
Lecture	1:00		
Activity 2-4: To be determined by instructor		00:00	
<b>Unit 2 Totals</b>	<b>7:00</b>	<b>00:00</b>	<b>7:00</b>
<b>Unit 3: Fire Protection Systems</b>			



## Fire Inspector 2C

Segment	Lecture Time	Activity Time	Total Unit Time
Topic 3-1: Reviewing Proposed Installation of Fire Protection Systems			
Lecture	4:00		
Activity 3-1: See suggested activity		00:30	
Topic 3-2: Reviewing Installed Fire Protection Systems			
Lecture	00:30		
Activity 3-2: To be determined by instructor		00:00	
Topic 3-3: Witnessing an Acceptance Test for an Integrated Fire Protection System			
Lecture	1:00		
Activity 3-3: To be determined by instructor		00:00	
<b>Unit 3 Totals</b>	<b>5:30</b>	<b>00:30</b>	<b>6:00</b>
<b>Unit 4: Emergency Access Criteria</b>			
Topic 4-1: Developing Emergency Access Criteria			
Lecture	1:00		
Activity 2-1: To be determined by instructor		00:00	
<b>Unit 4 Totals</b>	<b>1:00</b>	<b>00:00</b>	<b>1:00</b>
<b>Lecture, Activity, and Unit Totals:</b>	<b>14:30</b>	<b>00:30</b>	<b>15:00</b>

### Course Totals

Segment Type	Time
Total Lecture Time (LT)	14:30
Total Activity Time (AT)	00:30
Total Testing Time (TT)	1:00
<b>Total Course Time</b>	<b>16:00</b>



# Hazardous Materials, Operations, and Processes

## Course Plan

### Course Details

<b>Certification:</b>	Fire Inspector 2
<b>CTS Guide:</b>	Fire Inspector 2 Certification Training Standards Guide (2014)
<b>Description:</b>	This course provides students with a basic knowledge of hazardous materials, operations, and processes related to the roles and responsibilities of a Fire Inspector 2 including hazardous conditions, flammable and combustible liquids and gases, and hazardous materials.
<b>Designed For:</b>	The certified Fire Inspector 1 advancing to the Fire Inspector 2 classification
<b>Prerequisites:</b>	Fire Inspector 2A: Fire Prevention Administration
<b>Standard:</b>	Complete all activities and formative tests. Complete all summative tests with a minimum score of 80%.
<b>Hours:</b>	Lecture: 26:30 Activities: 2:30 Testing: 03:00
<b>Hours (Total):</b>	32:00
<b>Maximum Class Size:</b>	30
<b>Instructor Level:</b>	Primary Instructor
<b>Instructor/Student Ratio:</b>	1:30
<b>Restrictions:</b>	None
<b>SFT Designation:</b>	CFSTES

### Required Resources

#### Instructor Resources

To teach this course, instructors need:

- California Building Code  
(International Code Council, current edition)
- California Code of Regulations (CCR) Title 19  
(Office of Administrative Law, <https://oal.ca.gov/>)
- California Fire Code  
(International Code Council, current edition)

Reference manual options:

- *Fire Inspection and Code Enforcement Instructor Resource Kit*  
(IFSTA, 8th edition)

Or the combination of the following:

- *Fire Inspector: Principles and Practice*  
(International Association of Fire Chiefs, Revised Enhanced 1st edition, Jones & Bartlett Learning, ISBN: 9781284137743)
- *Fire Inspector: Principles and Practice Instructor's ToolKit* CD-ROM  
(International Association of Fire Chiefs, Cdr edition, Jones & Bartlett Learning, ISBN: 9781284095654)

#### Online Instructor Resources

The following instructor resources are available online at <http://osfm.fire.ca.gov/training/resources>:

- Course plan
- Website

#### Student Resources

To participate in this course, students need:

- California Fire Code
- (International Code Council, current edition)

Reference manual options:

- *Fire Inspection and Code Enforcement*  
(IFSTA, 8th edition, ISBN: 9780879396053)

Or

- *Fire Inspector: Principles and Practice*  
(International Association of Fire Chiefs, Revised Enhanced 1st edition, ISBN:  
9780763798574)

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### Unit 1: Introduction

#### Topic 1-1: Orientation and Administration

##### Terminal Learning Objective

At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, resources, evaluation methods, and participation requirements in the course syllabus.

##### Enabling Learning Objectives

1. Identify facility requirements
  - Restroom locations
  - Food locations
  - Smoking locations
  - Emergency procedures
2. Identify classroom requirements
  - Start and end times
  - Breaks
  - Electronic device policies
  - Special needs and accommodations
  - Other requirements as applicable
3. Review course syllabus
  - Course objectives
  - Calendar of events
  - Course requirements
  - Student evaluation process
  - Assignments
  - Activities
  - Required student resources
  - Class participation requirements

##### Discussion Questions

1. What is a formative test? What is a summative test?

##### Activities

1. To be determined by the instructor.

#### Topic 1-2: Fire Marshal Certification Process

##### Terminal Learning Objective

At the end of this topic, a student will be able to identify different levels in the Fire Marshal certification track, the courses and requirements for Fire Inspector 2 certification, and be able to describe the capstone task book and testing process.

##### Enabling Learning Objectives

1. Identify the different levels of certification in the Fire Inspector certification track
  - Fire Inspector 1

## Fire Inspector 2D

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- Fire Inspector 2
- 2. Identify the other Fire Prevention certification tracks
  - Plans Examiner
  - Fire Marshal
- 3. Identify the courses required for Fire Inspector 2
  - Fire Inspector 2A: Fire Prevention Administration
  - Fire Inspector 2B: Fire and Life Safety Requirements
  - Fire Inspector 2C: Fire and Life Safety Systems and Equipment Inspections
  - Fire Inspector 2D: Hazardous Materials, Operations, and Processes
- 4. Identify any other requirements for Fire Inspector 2
- 5. Describe the capstone task book process
  - Complete all prerequisites and course work
  - Submit application and fees to request capstone task book
    - Must be employed by a California Fire Agency as a Fire Inspector
  - Complete all job performance requirements included in the task book
  - Must have identified evaluator verify individual task completion via signature
  - Must have Fire Chief or authorized representative verify task book completion via signature
- 6. Describe the capstone testing process
  - Complete coursework
  - Schedule online capstone test
  - Schedule skills evaluation test

### Discussion Questions

1. How many levels are there in the Fire Marshal certification track? What are they?

### Activities

1. To be determined by the instructor.

## Unit 2: Hazardous Conditions

### Topic 2-1: Evaluating Hazardous Conditions Involving Equipment, Processes, and Operations

#### Terminal Learning Objective

At the end of this topic, a student, given field observations and documentation, will be able to evaluate hazardous conditions involving equipment, processes, and operations to verify installation in accordance with applicable codes and standards and identify, document, and report deficiencies in accordance with jurisdictional policies.

#### Enabling Learning Objectives

1. Identify applicable codes and standards associated with equipment, processes, and operations
  - Welding
  - Flammable finishes

- Dipping and coating
  - Quenching
  - Dry cleaning
  - Dust hazards
  - Asphalt and tar kettles
  - Semiconductor/electronic manufacturing
  - Motion picture and television production
  - Aviation facilities
  - Fruit ripening
  - Fumigation
  - Woodworking
  - Waste handling
  - Industrial ovens
2. Describe accepted fire protection practices
  3. Identify ignition sources related to hazardous conditions, equipment, and processes
  4. Describe safe housekeeping practices
  5. Identify additional reference materials related to protection of hazardous processes and code enforcement
  6. Observe hazardous conditions created by installation of equipment, processes and operations
  7. Recognize problems with equipment, processes, and operations involving hazardous conditions
  8. Interpret codes and communicate deficiencies in accordance with the policies of the AHJ

### Discussion Questions

1. Where would you find the code requirements for spraying operations?
2. When does the fire code not regulate a dry cleaning establishment?

### Activities

1. To be determined by the instructor.

### Instructor Notes

1. The Fire Inspector 2 is expected to have knowledge of processes and operations that include milling operations and the manufacture, storage, and use of hazardous chemicals and explosives.

**CTS Guide Reference:** CTS 3-6

## Topic 2-2: Evaluating Alternative Protection Measures for Equipment, Operations, and Processes

### Terminal Learning Objective

At the end of this topic, a student, given deficiencies noted during a field inspection of a facility and proposed alternative methods, will be able to evaluate alternative protection measures for equipment, operations, and processes to verify that the level of protection they provide complies with the intent of applicable codes and standards.

### Enabling Learning Objectives

1. Identify applicable codes and standards adopted by the jurisdiction
2. Describe hazards of the process or operation
3. Discuss fire protection systems requirements
4. Identify inherent hazards associated with equipment, operations, and processes
5. Identify necessary safety precautions
6. Describe how to evaluate alternative protection measures for equipment, operations, or processes to ensure the proposed protection level is equivalent to or greater than the intent of applicable codes and standards
7. Observe and recognize problems with alternative protection measures for equipment, operations, and processes
8. Verify compliance of alternative protection measures for equipment, operations, and processes in order to resolve deficiencies

### Discussion Questions

1. What kind of alternative protection measures can you use for hazardous processes?

### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 3-16

## Topic 2-3: Evaluating Fire Protection Plans and Practices

### Terminal Learning Objective

At the end of this topic, a student, given a field report describing a facility housing a complex process or operation, will be able to evaluate fire protection plans and practices to determine the fire growth potential for all areas and verify that the protection level is appropriate for the hazard in accordance with applicable codes and standards and jurisdictional policies.

### Enabling Learning Objectives

1. Identify the fire growth potential associated with complex processes or operations
  - Heat content of the materials involved
  - Exposed surface area
  - Material height and array
  - Continuity of combustible materials within a space
  - Ceiling height, ventilation or openness of the space
  - Detection and protection equipment
2. Identify the fire protection levels for various complex processes or operations
3. Analyze various scenarios to determine appropriate fire protection level
4. Describe evacuation procedures
5. Recognize problems with fire protection plans and practices
6. Evaluate hazards and verify appropriate protection level in accordance with applicable codes and standards and jurisdictional policies

### Discussion Questions

1. What process would you use to evaluate a fire protection plan for a complex process?



### Activities

1. Given a field report describing a facility housing a complex process or operation, have students analyze various scenarios to determine the appropriate fire protection level.

### Instructor Notes

1. Use the list from topic 2-1 for equipment, processes, and operations involving hazardous conditions.

**CTS Guide Reference:** CTS 3-17

## Unit 3: Flammable and Combustible Liquids and Gases

### Topic 3-1: Verifying Code Compliance for Storage, Handling, and Use of Flammable and Combustible Liquids and Gases

#### Terminal Learning Objective

At the end of this topic, a student, given field observations and inspection guidelines from the authority having jurisdiction, will be able to verify code compliance for storage, handling, and use of flammable and combustible liquids and gases to identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.

#### Enabling Learning Objectives

1. Describe the properties and hazards of flammable and combustible liquids and gases
2. Discuss material safety data sheets
3. Describe safe handling practices for flammable and combustible liquids and gases
4. Identify applicable codes and standards
  - CFC, chapter 34
5. Describe fire protection systems and equipment approved for the material
6. Describe fire behavior as it relates to flammable and combustible liquids and gases
7. Identify safety procedures
8. Identify storage compatibility requirements
9. Describe how to determine maximum allowable quantities (MAQ) of flammable and combustible liquids and gases
10. Describe control areas
11. Describe how to evaluate control areas as they relate to the storage of flammable and combustible liquids and gases
12. Describe general requirements for quantities not exceeding maximum allowable quantities per control area
13. Identify typical fire hazards associated with processes or operations utilizing flammable and combustible liquids
14. Observe and recognize problems with storage, handling, and use of flammable and combustible liquids and gases
15. Interpret codes in order to make decisions related to the compliant storage, handling, and use of flammable and combustible liquids and gases

16. Communicate deficiencies in accordance with applicable codes and standards and jurisdictional policies

### Discussion Questions

1. What happens if maximum allowable quantities are exceeded?
2. What kind of fire-rated wall defines control areas?
3. What is the purpose of a control area?
4. What type of fire protection system is required for flammable liquids and gases?

### Activities

1. Given MSDS sheets and appropriate tables, have students determine MAQs for different types of flammable liquids and gases.

**CTS Guide Reference:** CTS 3-8

## Topic 3-2: Evaluating Compliance Alternatives for the Storage, Handling, and Use of Flammable or Combustible Liquids and Gases

### Terminal Learning Objective

At the end of this topic, a student, given field inspection reports and proposed compliance alternatives, will be able to evaluate compliance alternatives for the storage, handling, and use of flammable or combustible liquids and gases so that their storage, handling, and use comply with the intent of applicable codes and standards and jurisdictional policies.

### Enabling Learning Objectives

1. Identify other agencies that have requirements and jurisdiction related to flammable and combustible liquids and gases
2. Describe how to evaluate compliance alternatives for the storage, handling, and use of flammable or combustible liquids and gases to ensure compliance with the intent of applicable codes and standards and jurisdictional policies
3. Read plans, reports and material safety data sheets as required to evaluate compliance alternatives for the storage, handling, and use of flammable or combustible liquids and gases

### Discussion Questions

1. What are some other agencies that may have jurisdiction related to flammable and combustible liquids and gases?
2. What are some proposed compliance alternatives that you may be required to evaluate?

### Activities

1. To be determined by the instructor.

**CTS Guide Reference:** CTS 3-20

### Unit 4: Hazardous Materials

#### Topic 4-1: Verifying Code Compliance for the Storage, Handling, and Use of Hazardous Materials

##### Terminal Learning Objective

At the end of this topic, a student, given field observations, will be able to evaluate code compliance for the storage, handling, and use of hazardous materials to identify, document, and report deficiencies in accordance with applicable codes and standards and jurisdictional policies.

##### Enabling Learning Objectives

1. Describe the properties and hazards associated with hazardous materials
2. Describe safe handling, use, and dispensing practices for hazardous materials
3. Identify applicable codes and standards
  - Hazardous materials - CFC, chapter 27
  - Compressed gases - CFC, chapter 30
  - Corrosive materials - CFC, chapter 31
  - Cryogenic fluids - CFC, chapter 32
  - Flammable solids - CFC, chapter 36
  - Highly toxic and toxic materials - CFC, chapter 37
  - Liquefied petroleum gases - CFC, chapter 38
  - Organic peroxides - CFC, chapter 39
  - Oxidizers - CFC, chapter 40
  - Unstable materials - CFC, chapter 43
  - Water-reactive solids and liquids - CFC, chapter 44
  - Radioactive materials - Nuclear Regulatory Commission
4. Describe fire protection systems and equipment approved for the material
5. Describe fire behavior as it relates to hazardous materials
6. Identify safety procedures
7. Describe chemical reactions
8. Identify storage compatibility requirements
9. Describe how to determine maximum allowable quantities (MAQ)
10. Describe control areas
11. Describe how to evaluate control areas as they relate to hazardous materials storage
12. Describe general requirements for quantities not exceeding maximum allowable quantities per control area
13. Identify fire hazards associated with processes or operations utilizing hazardous materials
14. Describe the requirements for, and contents of, a Hazardous Materials Management Plan
15. Observe and recognize problems with storage, handling, and use of hazardous materials

16. Interpret codes in order to make decisions related to the compliant storage, handling, and use of hazardous materials
17. Communicate deficiencies in accordance with applicable codes and standards and jurisdictional policies

### Discussion Questions

1. In what occupancy type might hazardous materials be found?
2. What hazard identification signs does indoor storage require?
3. Why are special requirements applied to group M and group S occupancies?
4. What is considered a portable tank?
5. What is the proper distance for a fire station to locate an above-ground protected diesel storage tank?

### Activities

1. Given a multi-story floor plan and an inventory of hazardous materials, have students list the maximum allowable quantity for each material assuming those materials are stored on the 6th floor.

**CTS Guide Reference:** CTS 3-9

## Topic 4-2: Evaluating Compliance Alternatives for the Storage, Handling, and Use of Hazardous Materials

### Terminal Learning Objective

At the end of this topic, a student, given field inspection reports and proposed compliance alternatives, will be able to evaluate compliance alternatives for the storage, handling, and use of hazardous materials to verify that their level of safety complies with the intent of applicable codes and standards and jurisdictional policies.

### Enabling Learning Objectives

1. Identify other agencies that have requirements and jurisdiction related to hazardous materials
2. Observe and recognize problems with compliance alternatives for the storage, handling, and use of hazardous materials
3. Describe how to evaluate compliance alternatives for the storage, handling, and use of hazardous materials to ensure compliance with the intent of applicable codes and standards and jurisdictional policies
4. Read plans, reports and material safety data sheets as required to evaluate compliance alternatives for the storage, handling, and use of hazardous materials

### Discussion Questions

1. What are some other agencies that may have jurisdiction related to hazardous materials?
2. What are some proposed compliance alternatives that you may be required to evaluate?

### Activities

1. To be determined by the instructor.

CTS Guide Reference: CTS 3-19

DRAFT

**Time Table**

Segment	Lecture Time	Activity Time	Total Unit Time
<b>Unit 1: Introduction</b>			
Topic 1-1: Orientation and Administration			
Lecture	00:30		
Activity 1-1: To be determined by instructor		00:00	
Topic 1-2: Fire Marshal Certification Process			
Lecture	00:30		
Activity 1-2: To be determined by instructor		00:00	
<b>Unit 1 Totals</b>	<b>1:00</b>	<b>00:00</b>	<b>1:00</b>
<b>Unit 2: Hazardous Conditions</b>			
Topic 2-1: Evaluating Hazardous Conditions Involving Equipment, Operations, and Processes			
Lecture	4:30		
Activity 2-1: To be determined by instructor		00:00	
Topic 2-2: Evaluating Alternative Protection Measures for Equipment, Operations, and Processes			
Lecture	2:00		
Activity 2-2: To be determined by instructor		00:00	
Topic 2-3: Evaluating Fire Protection Plans and Practices			
Lecture	1:00		
Activity 2-3: See suggested activity		00:30	
<b>Unit 2 Totals</b>	<b>7:30</b>	<b>00:30</b>	<b>8:00</b>
<b>Unit 3: Flammable and Combustible Liquids and Gases</b>			
Topic 3-1: Verifying Code Compliance for Storage, Handling, and Use of Flammable and Combustible Liquids and Gases			
Lecture	6:00		
Activity 3-1: See suggested activity		1:00	

## Fire Inspector 2D

Segment	Lecture Time	Activity Time	Total Unit Time
Topic 3-2: Evaluating Compliance Alternatives for the Storage, Handling, and Use of Flammable or Combustible Liquids and Gases			
Lecture	3:00		
Activity 3-2: To be determined by instructor		00:00	
<b>Unit 3 Totals</b>	<b>9:00</b>	<b>1:00</b>	<b>10:00</b>
<b>Unit 4: Hazardous Materials</b>			
Topic 4-1: Verifying Code Compliance for the Storage, Handling, and Use of Hazardous Materials			
Lecture	6:00		
Activity 4-1: See suggested activity		1:00	
Topic 4-2: Evaluating Compliance Alternatives for the Storage, Handling, and Use of Hazardous Materials			
Lecture	3:00		
Activity 3-2: [Activity Title]		00:00	
<b>Unit 4 Totals</b>	<b>9:00</b>	<b>1:00</b>	<b>10:00</b>
<b>Lecture, Activity, and Unit Totals:</b>	<b>26:30</b>	<b>2:30</b>	<b>29:00</b>

### Course Totals

Segment Type	Time
Total Lecture Time (LT)	26:30
Total Activity Time (AT)	2:30
Total Testing Time (TT)	3:00
<b>Total Course Time</b>	<b>32:00</b>

# FIRE INSPECTOR 2

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## Certification Task Book 2014



California Department of Forestry and Fire Protection  
Office of the State Fire Marshal  
State Fire Training



# **Fire Inspector 2**

## **Certification Task Book**

**January 2020**

**Version: 1.0.0**

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This Certification Task Book includes the certification training standards included in the Fire Inspector II CTS Guide (2014) which is based on NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner (2014) Chapter 5 Fire Inspector II and Chapter 6 Fire Inspector III.

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This book is published by State Fire Training

Cover photo courtesy of Dennis Mathisen, Roseville Fire Department

## Purpose and Process

The State Fire Training certification task book is a performance-based document. It lists the Experience, Rank or Position, and Job Performance requirements for certification.

### Purpose

Each certification task book focuses on a single State Fire Training job function certification. A certification task book identifies the minimum requirements necessary to perform the duties of that certification. Completion of a certification task book verifies that the candidate has the required experience, holds the required rank or position, and has demonstrated the job performance requirements necessary to obtain that certification.

### Responsibilities

#### Candidate Responsibilities

The candidate is the individual pursuing certification.

All candidates shall:

- Complete a block on the Signature Verification page with an original wet-ink signature.
  - No date shall be prior to the issuance date.
- Complete the Experience, Position, and Job Performance Requirements.
- Accurately record and maintain the certification task book.
- Sign and date the Candidate verification statement under the Authority segment with an original wet-ink signature.
- Retain a copy of the completed certification task book.
- Submit the completed certification task book to State Fire Training.

#### Evaluator Responsibilities

An evaluator is any individual who verifies that the candidate can satisfactorily execute a job performance requirement. A qualified evaluator is designated by the candidate's fire chief (or authorized designee) and shall possess the equivalent or higher-level certification. If no such evaluator is present within the organization, the fire chief (or authorized designee) shall designate an individual with more experience than the candidate and a demonstrated ability to execute the job performance requirements. A certification task book may have more than one evaluator.

All evaluators shall:

- Complete a block on the Signature Verification page with an original wet-ink signature.
- Review and understand the candidate's certification task book requirements and responsibilities.

- Verify the candidate’s successful completion of one or more job performance requirements through observation or review.
  - All Job Performance Requirements (JPR’s) shall be reviewed, validated and dated after issuance of the certification task book.
- Sign all appropriate lines in the certification task book with an original wet-ink signature to record demonstrated performance of tasks.

### Fire Chief Responsibilities

The fire chief (or authorized designee) is the individual who reviews and confirms the completion of a candidate’s certification task book.

The fire chief (or authorized designee) shall:

- Designate qualified evaluators.
- Complete a block on the Signature Verification page with an original wet-ink signature.
- Review the candidate’s certification task book requirements and responsibilities.
- Verify the candidate has obtained the appropriate signatures to verify successful completion of each job performance requirement.
  - Ensure that no signature or date is prior to the certification task book issuance date.
- Verify the experience segment is completed and sign the fire chief verification statement under Authority segment with an original wet-ink signature. If signing as an authorized designee, verify that your signature is on file with State Fire Training.

### Completion Process

When you receive your certification task book:

1. Thoroughly review the Experience, Rank or Position, and Job Performance Requirements segments to make sure that you understand them.
2. Confirm who will evaluate your job performance requirements with your fire agency.
3. Complete the Experience segment, if applicable.
4. Complete the Rank or Position segment.
5. Complete each requirement in the Job Performance Requirements segment and ensure that an evaluator signs and dates each one to verify completion. Also ensure that every evaluator is listed on the Signature Verification page.
6. Ask your fire chief (or authorized designee) to verify certification task book completion by signing the appropriate paragraph under Authority section.
7. Make a copy of the completed certification task book to retain with your personal records.
8. Mail the original certification task book to State Fire Training (see address below).

After receipt and successful review of your completed certification task book, State Fire Training will approve the certification task book and mail your certificate to you. State Fire Training retains the completed, authorized original certification task book in your career file.

If State Fire Training determines that your certification task book is incomplete State Fire Training will return insufficient components, replacement pages and a checklist indicating what needs to be completed.

**Do not submit this certification task book until you have:**

- Completed the Experience segment
- Fulfilled the Rank or Position segment
- Completed Job Performance Requirements
- Obtained all required signatures

**State Fire Training Mailing Address**

Office of the State Fire Marshal  
State Fire Training  
2251 Harvard Street, Suite 400  
Sacramento, CA 95815

### Completion Timeframe

State Fire Training aims to update certification task books on a five-year cycle. A certification task book in process is valid until State Fire Training issues a new certification task book for the same job function certification.

If a candidate does not complete a certification task book before the release of a new version, State Fire Training will send the candidate a task book revision supplement identifying any revisions or new requirements. The candidate must fulfill all requirements included in the revision supplement and submit the revision supplement with the original task book.

## Task Book Initiation

### Candidate Information

**Candidate:** \_\_\_\_\_

**SFT ID Number:** \_\_\_\_\_

**Fire Agency:** \_\_\_\_\_

**Issued By:** \_\_\_\_\_

**Issue Date:** \_\_\_\_\_

# Signature Verification

The following individuals have the authority to verify portions of this certification task book using the signature recorded below.

<b>Name:</b> _____	<b>Name:</b> _____
<b>Job Title:</b> _____	<b>Job Title:</b> _____
<b>Organization:</b> _____	<b>Organization:</b> _____
<b>Signature:</b> _____	<b>Signature:</b> _____
<b>Name:</b> _____	<b>Name:</b> _____
<b>Job Title:</b> _____	<b>Job Title:</b> _____
<b>Organization:</b> _____	<b>Organization:</b> _____
<b>Signature:</b> _____	<b>Signature:</b> _____
<b>Name:</b> _____	<b>Name:</b> _____
<b>Job Title:</b> _____	<b>Job Title:</b> _____
<b>Organization:</b> _____	<b>Organization:</b> _____
<b>Signature:</b> _____	<b>Signature:</b> _____
<b>Name:</b> _____	<b>Name:</b> _____
<b>Job Title:</b> _____	<b>Job Title:</b> _____
<b>Organization:</b> _____	<b>Organization:</b> _____
<b>Signature:</b> _____	<b>Signature:</b> _____

# Task Book Requirements

## Job Performance Requirements

All job performance requirements must be performed in accordance with the standards of the authority having jurisdiction (AHJ) or the National Fire Protection Association (NFPA), whichever is more restrictive.

For JPR's that are not part of a candidate's regular work assignment or are a rare event, the evaluator can develop a scenario or interview which supports the required task and evaluates the candidate to the stated standard.

**All Job Performance Requirements shall be reviewed, validated and dated after issuance of the certification task book.**

### Administration

1. Process a permit application, given a specific request, so that the application is evaluated and a permit is issued or denied in accordance with the applicable codes, standards, policies, and procedures of the jurisdiction. (5.2.1)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

2. Process a plan review application, given a specific request, so that the application is evaluated and processed in accordance with the applicable codes and standards and the policies of the jurisdiction. (5.2.2)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

3. Investigate complex complaints, given a reported situation or condition, so that complaint information is recorded, the investigation process is initiated, and the complaint is resolved in accordance with the applicable codes and standards and the policies of the jurisdiction. (5.2.3)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

4. Recommend modifications to the adopted codes and standards of the jurisdiction, given a fire safety issue, so that the proposed modifications address the problem, need, or deficiency. (5.2.4)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

5. Recommend policies and procedures for the delivery of inspection services, given management objectives, so that inspections are conducted in accordance with the policies of the jurisdiction and due process of the law is followed. (5.2.5)

Date Completed	Evaluator Verification
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6. Generate written correspondence related to the issuance of appeals, given a request for an appeal, so that the resulting document clearly addresses the issue and is appropriate for the intended audience. (6.2.1)

Date Completed	Evaluator Verification
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7. Propose technical reference material acquisition, given a scope of responsibility, budget limitations, and specific code- related issues, so that resources matching specific needs are acquired. (6.2.5)

Date Completed	Evaluator Verification
----------------	------------------------

8. Enforce permit regulations, given a permit application, or report of a violation and applicable codes and standards and policies of the jurisdiction, so that enforcement actions are taken in accordance with the applicable codes and standards and the policies of the jurisdiction and the violation is mitigated. (6.2.6)

Date Completed	Evaluator Verification
----------------	------------------------

9. Initiate legal action related to a fire code violation, given a description of a violation and a legal opinion, so that the action taken is in accordance with the policies of the jurisdiction and due process of law is followed. (6.2.7)

Date Completed	Evaluator Verification
----------------	------------------------

10. Evaluate inspection reports and completed forms and checklists, given applicable codes, standards, policies, and procedures of the jurisdiction, so that the information is correct, clear, and concise. (6.2.9)

Date Completed	Evaluator Verification
----------------	------------------------



## Field Inspection

11. Compute the maximum allowable occupant load of a multi-use building, given field observations or a description of its uses, so that the maximum allowable occupant load calculation is in accordance with applicable codes and standards. (5.3.1)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

12. Identify the occupancy classifications of a mixed-use building, given a description of the uses, so that each area is classified in accordance with applicable codes and standards. (5.3.2)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

13. Evaluate a building's area, height, occupancy classification, and construction type, given an approved set of plans and construction features, so that it is verified that the building is in accordance with applicable codes and standards. (5.3.3)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

14. Evaluate fire protection systems and equipment provided for life safety and property protection, given field observations of the facility and documentation, the hazards protected, and the system specifications, so that the fire protection systems provided are approved for the occupancy or hazard being protected. (5.3.4)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

15. Analyze the egress elements of a building or portion of a building, given observations made during a field inspection, so that means of egress elements are provided and located in accordance with applicable codes and standards and deficiencies are identified, documented, and reported in accordance with the policies of the jurisdiction. (5.3.5)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

16. Evaluate hazardous conditions involving equipment, processes, and operations, given field observations and documentation, so that the equipment, processes, or operations are installed in accordance with applicable codes and standards and deficiencies are identified, documented, and reported in accordance with the policies of the jurisdiction. (5.3.6)

Date Completed	Evaluator Verification
----------------	------------------------

17. Evaluate emergency planning and preparedness procedures, given existing or proposed plans and procedures and applicable codes and standards, so that compliance is determined. (5.3.7)

Date Completed	Evaluator Verification
----------------	------------------------

18. Verify code compliance for storage, handling, and use of flammable and combustible liquids and gases, given field observations and inspection guidelines from the authority having jurisdiction, so that deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction. (5.3.8)

Date Completed	Evaluator Verification
----------------	------------------------

19. Evaluate code compliance for the storage, handling, and use of hazardous materials, given field observations, so that deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction. (5.3.9)

Date Completed	Evaluator Verification
----------------	------------------------

20. Determine fire growth potential in a building or space, given field observations or plans, so that the contents, interior finish, and construction elements are evaluated for compliance, and deficiencies are identified, documented, and corrected in accordance with the applicable codes and standards and the policies of the jurisdiction. (5.3.10)

Date Completed	Evaluator Verification
----------------	------------------------

21. Verify compliance with construction documents, given a performance-based design, so that life safety systems and building services equipment are installed, inspected, and tested to perform as described in the engineering documents and the operations and maintenance manual that accompanies the design, so that deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction. (5.3.11)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

22. Verify code compliance of heating, ventilation, air conditioning, and other building service equipment and operations, given field observations, so that the systems and other equipment are maintained in accordance with applicable codes and standards and deficiencies are identified, documented, and reported in accordance with the policies of the jurisdiction. (5.3.12)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

23. Assess alternative methods to adjust occupant loads, given a description of an area, building, or portion of a building and its intended use, so that the occupant load is in accordance with applicable codes and standards. (6.3.1)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

24. Evaluate corrective measures, given a list of means of egress deficiencies in a building and the proposed correction, so that each deficiency and its proposed correction are evaluated for compliance with applicable codes and standards and deficiencies are identified, documented, and reported in accordance with the policies of the jurisdiction. (6.3.2)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

25. Evaluate the construction type required for an addition or remodeling project, given a description of the building and its use, so that the construction type is evaluated based on applicable codes and standards and deficiencies are identified, documented, and reported in accordance with the policies of the jurisdiction. (6.3.3)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

26. Evaluate alternative protection measures of equipment, operations, and processes, given deficiencies noted during a field inspection of a facility and proposed alternative methods, so that the equipment, process, or operation is provided with a level of protection that is in compliance with the intent of applicable codes and standards. (6.3.4)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

27. Evaluate fire protection plans and practices, given a field report describing a facility housing a complex process or operation, so that the fire growth potential for all areas is determined and the level of protection is appropriate to the hazard and in accordance with the applicable codes and standards and the policies of the jurisdiction. (6.3.5)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

28. Recommend criteria for the development of emergency planning and procedures, given a description of a building and its use, so that plans and procedures are in accordance with the applicable codes and standards and the policies of the jurisdiction. (6.3.6)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

29. Evaluate compliance alternatives for the storage, handling, and use of hazardous materials, given field inspection reports and proposed compliance alternatives, so that the hazardous materials are provided with a level of safety that is in accordance with the intent of applicable codes and standards and the policies of the jurisdiction. (6.3.7)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

30. Evaluate compliance alternatives for the storage, handling, and use of flammable or combustible liquids and gases, given field inspection reports and proposed compliance alternatives, so that the storage, handling, and use is provided with a level of safety that is in accordance with the intent of applicable codes and standards and the policies of the jurisdiction. (6.3.8)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

31. Witness an acceptance test for an integrated fire protection system, given approved shop drawings, test protocols, and an installed system, so that system performance can be evaluated for compliance, and deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction. (6.3.9)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

32. Develop emergency access criteria, given the jurisdiction’s emergency fire apparatus and fire suppression practices, so that fire suppression services can be delivered in accordance with the policies of the jurisdiction. (6.3.10)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

33. Evaluate compliance with construction documents, given a performance-based design, so that life safety systems and building services equipment are installed, inspected, and tested to perform as described in the engineering documents, and the operations and maintenance manual that accompanies the design and deficiencies are identified, documented, and reported in accordance with the policies of the jurisdiction. (6.3.11)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

### Plan Review

34. Classify the occupancy, given a set of plans, specifications, and a description of a building, so that the classification is made in accordance with the applicable codes and standards and the policies of the jurisdiction. (5.4.1)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

35. Compute the maximum allowable occupant load, given a floor plan of a building or portion of the building, so that the calculated occupant load is in accordance with the applicable codes and standards and the policies of the jurisdiction. (5.4.2)

\_\_\_\_\_  
Date Completed

\_\_\_\_\_  
Evaluator Verification

36. Review the proposed installation of fire protection systems, given shop drawings and system specifications for a process or operation, so that the system is reviewed for code compliance and installed in accordance with the approved drawings, and deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction. (5.4.3)

Date Completed	Evaluator Verification
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37. Review the installation of fire protection systems, given an installed system, shop drawings, and system specifications for a process or operation, so that the system is reviewed for code compliance and installed in accordance with the approved drawings, and deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction. (5.4.4)

Date Completed	Evaluator Verification
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38. Verify that means of egress elements are provided, given a floor plan of a building or portion of a building, so that all elements are identified and checked against applicable codes and standards and deficiencies are discovered and communicated in accordance with the policies of the jurisdiction. (5.4.5)

Date Completed	Evaluator Verification
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39. Verify the construction type of a building or portion thereof, given a set of approved plans and specifications, so that the construction type complies with the approved plans and applicable codes and standards. (5.4.6)

Date Completed	Evaluator Verification
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## Experience

The candidate meets the following requirements for experience.

- Has a minimum of two (2) year's full-time paid experience in a Recognized Fire Agency in California as fire inspector or fire prevention officer

**OR**

- Has a minimum of four (4) year's volunteer or part time paid experience in a Recognized Fire Agency in California as fire inspector or fire prevention officer  
Position

## Position

The candidate meets this qualifications for this level of certification. The position requirement is met when applicant fulfills the role of the specific duties as defined by the Fire Chief. Performing in an acting capacity does not qualify.

## Supporting Documentation

The candidate has completed the following (submit verification with Task Book submittal to SFT).

- Current International Code Council (ICC) Fire Inspector I or Fire Inspector II national certification (current edition or within one code cycle).

