



# Fire Investigation Program Management (2024)

## Course Plan

### Course Details

<b>Certification:</b>	Fire Marshal
<b>CTS Guide:</b>	Fire Marshal (2024)
<b>Description:</b>	This course provides an overview of the knowledge and skills needed to administer fire investigation requirements, review documentation intended for litigation or resolution, conduct investigative analysis, manage technical resources, construct a resource plan for investigations with allied groups, adapt technology to incident needs, and develop and manage a comprehensive investigation program.
<b>Designed For:</b>	Personnel preparing to pursue Fire Marshal certification or anyone who manages a fire investigation program within their agency
<b>Prerequisites:</b>	None
<b>Standard:</b>	Complete all activities and formative tests. Complete all summative tests with a minimum score of 80%.
<b>Hours (Total):</b>	24 hours (16 lecture / 6 application / 2 testing)
<b>Maximum Class Size:</b>	30
<b>Instructor Level:</b>	SFT Fire Marshal Registered Instructor
<b>Instructor/Student Ratio:</b>	1:30 (lecture) 1:15 (application)
<b>Restrictions:</b>	None
<b>SFT Designation:</b>	CFSTES

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## Required Resources

### Instructor Resources

To teach this course, instructors may use:

- NFPA 921: Guide for Fire and Explosion Investigations (current edition)
- NFPA 1030: Standard for Professional Qualifications for Fire Prevention Programs (current edition)
- NFPA 1033: Standard for Professional Qualifications for Fire Investigator (current edition)
- NFPA 1037: Standard for Professional Qualifications for Fire Prevention Program Positions (current edition)
- Sample fire investigation reports (Topic 2-2)
- PPE and investigation tools (Topic 2-4)

### Online Instructor Resources

The following instructor resources are available online at <https://osfm.fire.ca.gov/what-we-do/state-fire-training/professional-certifications>:

- None

### Student Resources

To participate in this course, students need:

- NFPA 921: Guide for Fire and Explosion Investigations (current edition / physical or digital access)
- NFPA 1030: Standard for Professional Qualifications for Fire Prevention Programs (current edition / physical or digital access)
- NFPA 1033: Standard for Professional Qualifications for Fire Investigator (current edition / physical or digital access)
- NFPA 1037: Standard for Professional Qualifications for Fire Prevention Program Positions (current edition / physical or digital access)
- Student's AHJ fire investigation policies (Topic 2-1)

### Facilities, Equipment, and Personnel

#### Facilities

The following facilities are required to deliver this course:

- Standard learning environment or facility, which may include:
  - Dry erase board or paper easel chart
  - Markers, erasers
  - Amplification devices
  - Projector and screen
  - Laptop or tablet with presentation or other viewing software
  - Internet access with appropriate broadband capabilities

## Time Table

Segment	Lecture	Application	Unit Total
<b>Unit 1: Introduction</b>			
Topic 1-1: Orientation and Administration	0.50	0.00	
Topic 1-2: Fire Marshal Certification Process	0.50	0.00	
<b>Unit 1 Totals</b>	<b>1.00</b>	<b>0.00</b>	<b>1.00</b>
<b>Unit 2: Investigation</b>			
Topic 2-1: Administering Fire Investigation Requirements	6.00	1.25	
Topic 2-2: Reviewing Documentation Intended for Litigation or Resolution	2.00	1.25	
Topic 2-3: Conducting Investigative Analysis	1.00	0.00	
Topic 2-4: Managing Technical Resources Needed to Perform Investigations	2.00	1.25	
Topic 2-5: Constructing a Resource Plan for Investigations with Allied Groups	2.00	2.25	
Topic 2-6: Adapting Technology to Incident Needs	2.00	0.00	
<b>Unit 2 Totals</b>	<b>15.00</b>	<b>6.00</b>	<b>20.00</b>
<b>Formative Assessments</b>			
Determined by AHJ or educational institution	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Summative Assessment</b>			
Determined by AHJ or educational institution	<b>0.00</b>	<b>2.00</b>	<b>1.50</b>
<b>Course Totals</b>	<b>16.00</b>	<b>8.00</b>	<b>24.00</b>

## **Time Table Key**

1. The Time Table documents the amount of time estimated to deliver the content included in the course plan.
2. Time is documented using the quarter system: 15 min. = .25 / 30 min. = .50 / 45 min. = .75 / 60 min. = 1.0.
3. The Course Totals do not reflect time for lunch (1 hour) or breaks (10 minutes per each 50 minutes of instruction or assessment). It is the instructor's responsibility to add this time based on the course delivery schedule.
4. Application (activities, skills exercises, and formative testing) time will vary depending on the number of students enrolled. The Application time documented is based on the maximum class size identified in the Course Details section.
5. Summative Assessments are determined and scheduled by the authority having jurisdiction. These are not the written or psychomotor State Fire Training certification exams. These are in-class assessments to evaluate student progress and calculate course grades.

## **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, skills exercises, 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. Determined by instructor

#### **Application**

1. Determined by instructor

## Topic 1-2: Fire Marshal Certification Process

### Terminal Learning Objective

At the end of this topic a student will be able to identify the requirements for Fire Marshal certification and describe the certification task book and examination process.

### Enabling Learning Objectives

1. Identify the levels of certification in the Fire Marshal certification track
  - First Responder Inspector (formerly Inspector 2)
  - Fire Inspector (formerly Inspector 2)
  - Fire Plans Examiner (formerly Plan Examiner)
  - Fire Marshal
2. Identify the prerequisites for Fire Marshal certification
  - One of the following certifications:
    - ICC Fire Inspector 2 certification
    - OSFM Fire Inspector 2 (2014 or newer) **or** OSFM Fire Inspector (2024) **and** OSFM Plan Examiner (2015 or newer) **or** OSFM Fire Plans Examiner (2024)
3. Identify the course work required for Fire Marshal certification
  - Fire Marshal 1A: Administration and Professional Development (2024)
  - Fire Marshal 1B: Community Risk Reduction Planning and Management (2024)
  - Fire Marshal 1C: Fire Investigation Program Management (2024)
  - Fire Marshal 1D: Regulatory Program Management (2024)
  - Chief Fire Officer 3A: Human Resource Management for Chief Fire Officers (2014 or newer) **OR** Fire Officer 3A: Human Resource Management (2020)
  - Fire and Life Safety Educator (2019 or newer)
  - Statutes and Regulations (SFT)
  - G0290: Basic Public Information Officer Course (2016) **OR** L0105: Public Information Basics (2025) **OR** S-203: Introduction to Incident Information (CalEMA/Cal OES, CSTI, CDF/CAL FIRE, FEMA, FIREScope, NFA, NWCG, SFT) **OR** E/L0105: Public Information Basics (EMI, CSTI)
4. Identify the exams requirements for Fire Marshal certification
  - Not applicable
5. Identify the task book requirements for Fire Marshal certification
  - Fire Marshal Certification Task Book (2024)
6. Identify the experience requirements for Fire Marshal certification
  - Has a minimum of five (5) years' full-time paid experience or 10 years' volunteer or part-time paid experience in a recognized California fire agency with at least one (1) year full-time paid experience or two (2) years' volunteer or part-time paid time serving as a fire marshal
7. Identify the position requirements for Fire Marshal certification
  - None
8. Describe the certification task book process
9. Describe the certification testing process
  - Not applicable

- All formative and summative testing is completed in individual courses

**Discussion Questions**

1. Do you have any questions about the requirements for SFT Fire Marshal certification?

**Application**

1. Determined by instructor



## Unit 2: Fire Investigation

### Topic 2-1: Administering Fire Investigation Requirements

#### Terminal Learning Objective

At the end of this topic a student, given applicable codes, standards, AHJ requirements, reference materials, and laws related to fire investigations, will be able to administer applicable codes, standards, and AHJ requirements for fire investigations so that investigators are knowledgeable and operate within organizational policies; legal requirements are met; AHJ requirements that are consistent, complete, and safe are formulated for required investigations, the fire marshal can manage a comprehensive fire investigation program.

#### Enabling Learning Objectives

1. Define key fire investigation terms
  - Origin: The general location where a fire or explosion began. (NFPA 921, Chapter 3)
  - Fire cause: The circumstances, conditions, or agencies that bring together a fuel, ignition source, and oxidizer (such as air or oxygen) resulting in a fire or a combustion explosion. (NFPA 921, Chapter 3)
  - Fire investigation: The process of determining the origin, cause, and development of a fire or explosion. (NFPA 921, Chapter 3)
  - Arson: Willfully and maliciously setting fire to, burning, causing to be burned, or aiding, counseling, or procuring the burning of, any structure, forest land, or property. (California Penal Code 451)
  - Reckless burning: Unlawfully causing a fire by recklessly setting fire to, burning, or causing to be burned any structure, forestland, or property. (California Penal Code 452)
2. Describe applicable codes, standards, and AHJ requirements to conduct investigations
  - California Fire Code, 104.11
  - California Health and Safety Code, 13107
  - California Penal Code
    - 451
    - 452
    - 830
3. Describe laws and legal aspects of investigations
4. Describe how to identify different types of fire investigations
  - For reporting purposes only
    - No identified crime
    - Trend identification
    - Risk analysis
  - For a civil case
    - Fire caused by product failure or malfunction
  - For a criminal case
    - Arson
    - Reckless burning

- Insurance fraud
- 5. Identify local, state, federal, tribal, and provincial laws
  - California Fire Code charging language
- 6. Identify fire investigation models
  - Dedicated unit
  - Suppression personnel
  - Regional group
  - Contract
  - Office of the State Fire Marshal
- 7. Identify resources
- 8. Describe investigation methodology
  - NFPA 921: Guide for Fire and Explosion Investigations (current edition)
- 9. Describe how to conduct investigations
  - Scientific method
  - Methodical approach
  - Always treat as a criminal scene
- 10. Describe how to monitor investigative actions and administrative follow up
  - Review and evaluate investigation reports and data
  - Analyze in context patterns and trends
  - Recommend action that enhances fire prevention and education programs
- 11. Describe different requirements for different types of fire investigations
  - Securing a scene
  - Collecting and storing evidence
  - External agency or organization involvement
- 12. Apply codes, standards, and AHJ requirements to conduct investigations
- 13. Describe common policy issues
  - Firearms use by investigators
- 14. Describe how to develop an administrative policy for fire origin and cause investigations
  - Consider codes, standards, and AHJ requirements for investigations including:
    - NFPA 921: Guide for Fire and Explosion Investigations (current edition)
    - NFPA 1033: Standard for Professional Qualifications for Fire Investigators (current edition)
    - NFPA 1030: Standard for Professional Qualifications for Fire Prevention Program Positions (current edition)
  - Apply local, state, and federal laws, including:
    - California Penal Code
    - Search and seizure case law
  - Apply organizational policies
  - Select program components
- 15. Describe how to identify and develop policies and procedures related to fire investigations:
  - Authority
    - Legal authority to conduct investigations

- Criminal case management
  - Conducting arrests
  - Conducting interviews
  - Conducting search and seizure
  - Search warrant policy
  - Use of force policy
  - Using applicable criminal civil statutes
  - Criminal database use policies
    - California Justice Information Center (CJIC)
    - National Crime Information Center (NCIC)
    - Transunion TLOxp
  - Criminal filing policy
- Civil case management
  - Interpreting and using contract and insurance law
  - Maintaining chain of custody
  - Evidence collection and storage
  - Using applicable civil statutes
  - Forensic analysis and laboratory testing
- Report writing
  - Report review
  - Status of notes
- Evidence
  - Maintaining chain of custody
  - Evidence collection and storage
  - Forensic analysis and laboratory testing
- Training
  - Investigator training and certification
  - Weapon qualifications
  - Defensive tactics
  - Driver training
- Special topics in fire investigations
  - Juvenile fire-setter programs
  - Fire fatalities
  - Large loss fires
  - Serial arson
  - Code 3 driving policy
- Agency coordination
  - Fire agencies
  - Law enforcement agencies
  - School districts
  - Local government (cities, counties, etc.)
  - California Department of Insurance
  - Other state and federal agencies

- DMV
- ATF

16. Manage the investigative process and evaluate the results
17. Identify technical writing and procedure/policy formatting requirements
18. Use verbal and written communication skills

**Discussion Questions**

1. What is the difference between fire investigation and arson investigation?
2. How would an investigation for a criminal case differ from an investigation for reporting purposes?
3. What is the role of the private investigator? How can he or she assist with the fire agency origin and cause investigation?
4. What are the potential consequences of having no policy or incomplete policies for conducting fire investigations?
5. What groups within your city or county could you go to for help in developing a fire investigation program?

**Application**

1. Using a sample of AHJ policies (provided by students), have students compare their policies with NFPA 1030, 1033, and 921 (current edition) to determine consistency.

**Instructor Notes**

1. None

**CTS Guide Reference:** CTS 8-1, CTS 8-5

## **Topic 2-2: Reviewing Documentation Intended for Litigation or Resolution**

### **Terminal Learning Objective**

At the end of this topic a student, given details of an investigation including evidence collected, reports, scene sketches, photographs, other related information, and data relevant to the investigation, will be able to review and assess investigation reports and data to be submitted in anticipation of litigation or resolution so that complete, accurate documents are submitted for possible legal action.

### **Enabling Learning Objectives**

1. Identify types and formats of investigation reports
  - Paper-based
  - Electronic
2. Describe how to review and assess investigation data and reports
  - Review for compliance with agency report-writing policies and procedures
  - Review for accuracy, completeness, and verifiability
    - Data accuracy for electronic formats
  - Review for clear and concise writing techniques
    - Remove irrelevant material
    - Use correct grammar, spelling, and punctuation
    - Write from a first-person point of view
    - Avoid jargon and overly complicated or ambiguous terminology
    - Use paragraphs that are short and to the point
    - Use simple language
    - Place opinions and conclusions in the correct locations
    - Maximize statements of fact and observations that an investigator can prove
  - Ensure correlation with the National Emergency Response Information System (NERIS) or incident reports
  - Anticipate submittal for litigation or resolution
  - Ensure that report or data content supports report conclusion or findings
3. Identify local, state, federal, tribal, and provincial laws related to investigation, codes, standards, and AHJ requirements
  - Civil rights laws
  - Fair Credit Reporting Act
  - Laws applicable to the AHJ
  - Libel and slander laws
  - Privacy laws
  - Punitive damages and attorney-client privilege laws
  - Rules of evidence, including spoliation
  - Trespass and invasion of privacy laws
4. Identify other pertinent references
5. Write technical reports
6. Review fire investigation reports
7. Compile and analyze investigative data

**Discussion Questions**

1. How important is effective report writing while conducting fire investigations?
2. Who may read the report?

**Application**

1. Given a fire investigation report (provided by instructor), have students conduct an analysis and evaluate the conclusions.
  - Does the documented information support the conclusion?

**Instructor Notes**

1. Be familiar with ASTM E620, *Standard Practice for Reporting Opinions of Scientific or Technical Experts*.

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

## **Topic 2-3: Conducting Investigative Analysis**

### **Terminal Learning Objective**

At the end of this topic a student, given reports compiled from investigation data, will be able to conduct investigative analysis, to recommend action, so fire prevention and other programs can be enhanced.

### **Enabling Learning Objectives**

1. Identify data sources used for investigative analysis
2. Describe how to conduct statistical analysis
3. Use verbal and written communication
4. Write technical reports
5. Evaluate data
6. Communicate findings verbally and in writing
7. Decide on a course of action
  - Public education campaign
  - Code change
    - Ordinance
    - Model code
  - Legislation

### **Discussion Questions**

1. How does fire investigation analysis impact a community risk reduction program?

### **Application**

1. Determined by instructor

### **Instructor Notes**

1. Refer to NFPA 921: Guide for Fire and Explosion Investigations (current edition) when teaching this section.

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

## **Topic 2-4: Managing Technical Resources Needed to Perform Investigations**

### **Terminal Learning Objective**

At the end of this topic a student, given personnel, protective equipment, AHJ requirements, and other necessary equipment, including investigation tools and resources for investigations, will be able to manage technical resources needed to perform investigations so that investigators are protected and equipped and investigations are conducted in accordance with safety requirements.

### **Enabling Learning Objectives**

1. Identify resources needed to perform a fire investigation
  - Personnel
    - Peace officer status (California Penal Code 830.37)
    - Education and certification requirements
  - AHJ requirements
  - Protective equipment
    - Personal protective equipment
    - Air monitoring equipment
  - Investigation tools
    - Evidence cans
    - Evidence tags
    - Photography equipment
    - Special equipment for digging into debris
    - Lighting equipment
    - Tool kits
    - Hydrocarbon detector
    - Decontamination equipment
  - Resources
    - Law enforcement support
    - Crime lab support
    - In-service personnel
    - District attorney support
2. Describe procedures for managing resources needed to perform fire investigations
  - Training on report writing policies and procedures
  - Coordinating tasks and people
  - Protecting and equipping investigators
  - Conducting investigations according to AHJ policies and procedures
  - Ensuring safety
  - Long-term case management
3. Identify local, state, federal, tribal, and provincial laws, regulations, and standards for the safety of employees
4. Demonstrate technical knowledge of equipment
5. Describe how to use personal protective ensemble and tools needed to conduct investigations
6. Use personal protective ensemble and tools needed to conduct investigations



7. Coordinate tasks and people
8. Write procedures
9. Communicate
10. Utilize resources

**Discussion Questions**

1. Should fire investigators be required to wear breathing apparatus during investigations?
2. Why is it important to use clean evidence collection tools and equipment?
3. What factors should be considered to ensure investigator safety?

**Application**

1. Given the protective equipment and investigation tools listed in ELO 1, have students practice using them.

**Instructor Notes**

1. None

**CTS Guide Reference:** CTS 8-4

## **Topic 2-5: Constructing a Resource Plan for Investigations with Allied Groups**

### **Terminal Learning Objective**

At the end of this topic a student, given knowledge of the capabilities of available groups and resources, will be able to construct a resource plan for investigations with allied groups to adapt to incident needs so that response to various types of incidents can be investigated.

### **Enabling Learning Objectives**

1. Describe types of complex fire investigations
  - Large loss
  - Fire death
  - Serial arson
  - Campaign wildfire
  - Pipeline, plane or rail crash, other transportation
2. Identify local, state, federal, tribal, and provincial resources and their capabilities
  - Federal Bureau of Investigation
  - Federal Bureau of Alcohol, Tobacco, Firearms, and Explosives
  - Cal FIRE / Office of the State Fire Marshal
  - Local fire agencies
  - Local law enforcement agencies
  - Forensic laboratories
  - District attorney
  - Coroner
  - Environmental agencies
    - Water system impact
    - Runoff/contamination
    - Hazardous materials
3. Use verbal and written communication skills
4. Utilize resources

### **Discussion Questions**

1. What agency would assist you with fire investigations involving:
  - A church
  - A hate crime
  - A terrorist attack

### **Application**

1. Given a large or complex fire scenario, have the students create an Investigations Branch ICS plan detailing how they would organize the fire investigation, and identify the resources needed to complete the investigation. Student groups will present their findings to the class as a briefing.

### **Instructor Notes**

1. Consider bringing in representative from allied agencies as guest speakers to discuss their role in fire investigations.

**CTS Guide Reference:** CTS 8-6

## **Topic 2-6: Adapting Technology to Incident Needs**

### **Terminal Learning Objective**

At the end of this topic, a student, given knowledge of the capabilities of available technology and resources, will be able to adapt technology to incident needs so that response to various types of incidents can be investigated.

### **Enabling Learning Objectives**

1. Describe different technologies that can be used for fire investigations, including:
  - Drones
  - Lidar
  - Simulators
    - FDS/Smokeyview
    - Egress simulators (E-Sim, Pathfinder, etc.)
  - AutoCAD/3D building models
  - GIS
  - AR/VR
  - Private search databases
    - TLOxp Transunion
    - NICB – National Insurance Crime Bureau
    - PACER – Public Access to Court Electronic Records
  - Crime search databases
    - NCIC – National Crime Information Center
    - CJIS – Criminal Justice Information System
    - Local databases (i.e., LA Clear)
2. Identify training issues related to technology use
3. Identify policy issues related to technology use
4. Use verbal and written communication skills
5. Utilize technology tools and resources

### **Discussion Questions**

1. What types of fire investigation technology are available in your AHJ that you may already use in a different capacity?

### **Application**

1. Determined by instructor

### **Instructor Notes**

1. Bring in different technology tools to demonstrate with students

**CTS Guide Reference:** CTS 8-7

## How to Read a Course Plan

A course plan identifies the details, logistics, resources, and training and education content for an individual course. Whenever possible, course content is directly tied to a national or state standard. SFT uses the course plan as the training and education standard for an individual course. Individuals at fire agencies, academies, and community colleges use course plans to obtain their institution's consent to offer course and provide credit for their completion. Instructors use course plans to develop syllabi and lesson plans for course delivery.

### Course Details

The Course Details segment identifies the logistical information required for planning, scheduling, and delivering a course.

### Required Resources

The Required Resources segment identifies the resources, equipment, facilities, and personnel required to deliver the course.

### Unit

Each Unit represents a collection of aligned topics. Unit 1 is the same for all SFT courses. An instructor is not required to repeat Unit 1 when teaching multiple courses within a single instructional period or academy.

### Topics

Each Topic documents a single Terminal Learning Objective and the instructional activities that support it.

### Terminal Learning Objective

A Terminal Learning Objective (TLO) states the instructor's expectations of student performance at the end of a specific lesson or unit. Each TLO includes a task (what the student must be able to do), a condition (the setting and supplies needed), and a standard (how well or to whose specifications the task must be performed). TLOs target the performance required when students are evaluated, not what they will do as part of the course.

### Enabling Learning Objectives

The Enabling Learning Objectives (ELO) specify a detailed sequence of student activities that make up the instructional content of a lesson plan. ELOs cover the cognitive, affective, and psychomotor skills students must master to complete the TLO.

### Discussion Questions

The Discussion Questions are designed to guide students into a topic or to enhance their understanding of a topic. Instructors may add to or adjust the questions to suit their students.

**Application**

The Application segment documents experiences that enable students to apply lecture content through cognitive and psychomotor activities, skills exercises, and formative testing. Application experiences included in the course plan are required. Instructors may add additional application experiences to suit their student population if time permits.

**Instructor Notes**

The Instructor Notes segment documents suggestions and resources to enhance an instructor's ability to teach a specific topic.

**CTS Guide Reference**

The CTS Guide Reference segment documents the standard(s) from the corresponding Certification Training Standard Guide upon which each topic within the course is based. This segment is eliminated if the course is not based on a standard.

**Skill Sheet**

The Skill Sheet segment documents the skill sheet that tests the content contained within the topic. This segment is eliminated if the course does not have skill sheets.