

# FIRE 0181 - FIRE INVESTIGATION 1A, BASIC FIRE INVESTIGATION

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## Catalog Description

Formerly known as FIRE 154

Prerequisite: Completion of FIRE 3 with grade of "C" or better

Hours: 39.5 lecture

Description: Designed for fire investigators and law enforcement officers responsible for conducting fire investigations. This course provides information on securing the fire scene and determining the origin and cause of the fire. Topics include responsibilities of a fire investigator, securing the fire ground, conducting an exterior and interior survey, analyzing fire patterns, interpreting individual fire patterns, discriminating the effects of explosions, examining and removing fire debris, reconstructing the area of origin, inspecting the performance of building systems. (not transferable)

## Course Student Learning Outcomes

- CSLO #1: Outline the responsibilities of a Fire Investigator.
- CSLO #2: Explain how to conduct exterior and interior building surveys.
- CSLO #3: Identify and interpret fire patterns.
- CSLO #4: Explain how to examine and remove fire debris and reconstruct the area of origin.

## Effective Term

Fall 2019

## Course Type

Credit - Degree-applicable

## Contact Hours

39.5

## Outside of Class Hours

79

## Total Student Learning Hours

118.5

## Course Objectives

1. Identify the courses and requirements for Fire Investigator certification, and describe the certification task book and testing process.
2. Employ all aspects of the scientific method as the operating analytical process throughout the investigation.
3. Describe how to secure the fire ground to protect all evidence or potential evidence from damage or destruction and ensure unauthorized persons recognize the perimeters of the investigative scene and are kept from the restricted areas.
4. Describe how to conduct an exterior survey to identify and preserve evidence, interpret fire damage, identify hazards to avoid injuries,

determine accessibility to the property, and discover all potential means of ingress and egress.

5. Describe how to conduct an interior survey to identify and preserve areas of potential evidentiary value requiring further examination, determine the evidentiary value of contents, and identify hazards to avoid injuries.

6. Analyze fire patterns to determine fire development, evaluate methods and effects of suppression, recognize false origin area patterns, and identify all areas of origin.

7. Interpret individual fire patterns and the burning characteristics of the material involved in relationship with all patterns observed and the mechanisms of heat transfer that led to the formation of the pattern.

8. Describe the effects of explosions from other types of damage to identify an explosion and preserve its evidence.

9. Examine and remove fire debris to check for fire cause evidence, identify potential ignition source(s), and preserve evidence without investigator-inflicted damage or contamination.

10. Explain how to reconstruct the area of origin to identify and correlate all protected areas and fire patterns related to contents or structural remains, return items potentially critical to cause determination and photo documentation to their prefire location, and discover the area(s) or point(s) of origin.

11. Explain how to inspect the performance of building systems, including detection, suppression, HVAC, utilities, and building compartmentation to determine the need for expert resources, consider an operating system's impact on fire growth and spread in identifying origin areas, identify defeated and/or failed systems, and recognize the system's potential as a fire cause.

## General Education Information

- Approved College Associate Degree GE Applicability
- CSU GE Applicability (Recommended-requires CSU approval)
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

## Articulation Information

- Not Transferable

## Methods of Evaluation

- Objective Examinations
  - Example: Students will take a multiple-choice examination on fire spread following an instructor provided scenario. Example Question: Which of the following factors contributed to vertical fire spread? A. Construction Materials, B. Doors and Windows, C. The elevator shaft, D. The stored file boxes
- Problem Solving Examinations
  - Example: Given an instructor provided scenario of a residential structure fire that started in the garage, students are to identify the area of origin and fire cause. Rubric Grading.

## Repeatable

No

## Methods of Instruction

- Lecture/Discussion

Lecture:

1. Following a lecture on interpreting individual fire patterns and the burning characteristics, students will identify burn patterns from instructor provided photos.
2. After observing a controlled burn, students will describe observable fire effect and burn patterns.

## **Typical Out of Class Assignments**

### **Reading Assignments**

1. Read chapter in text on scientific method in relation to fire origin and cause and be prepared to discuss in class. 2. Read chapter in text on identifying types of evidence and answer review questions in back of chapter.

### **Writing, Problem Solving or Performance**

1. Students will write a report on the effects of fire on construction materials. 2. In a report, students will explain how to conduct an exterior survey of a fire building.

### **Other (Term projects, research papers, portfolios, etc.)**

### **Required Materials**

- Fire Investigator, Principles and Practice
  - Author: International Association of Fire Chiefs & Intern. Assoc. of Arson Investigators
  - Publisher: Jones and Bartlett Learning
  - Publication Date: 2016
  - Text Edition: 4th
  - Classic Textbook?:
  - OER Link:
  - OER:

### **Other materials and-or supplies required of students that contribute to the cost of the course.**