

# FIRE 210S : STRUCTURE FIRE INVESTIGATION

## Transcript title

Structure Fire Investigation

## Credits

2

## Grading mode

Standard letter grades

## Total contact hours

40

## Other hours

40

## Prerequisites

FIRE 104, FIRE 105, FIRE 110, FIRE 112, FIRE 120, FIRE 175, and FIRE 205.

## Course Description

Provides the technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the fire setter, and types of fire causes. Fire and Emergency Services Higher Education (FESHE) non-core requirement equivalent to NFA C0283.

## Course learning outcomes

1. Demonstrate the importance of documentation, evidence collection, and scene security process needed for successful resolution.
2. Demonstrate the process of conducting fire origin and cause determination.
3. Identify the processes of proper documentation.

## Content outline

The learning outcomes are those of the National Fire Academy (NFA)

1. Emergency responder responsibilities and observations
  - a. Responsibilities of the fire department
  - b. Responsibilities of the firefighter
  - c. Responsibilities of the fire officer
  - d. Observations when approaching the scene
  - e. Observations upon arrival
  - f. Observations during firefighter operations
  - g. Identification of incendiary devices
2. Constitutional law
  - a. Criminal law
  - b. Constitutional amendments
3. Case studies
  - a. Michigan v. Tyler
  - b. Michigan v. Clifford
  - c. Daubert decision
  - d. Benfield decision
  - e. Kuhmo/Carmichael decision
4. Fire investigation terminology
  - a. Terms as they apply to structural fires
  - b. Terms as they apply to vehicle fires
  - c. Other common investigative terms.
5. Basic elements of fire dynamics
  - a. Ignition
  - b. Heat transfer
  - c. Flame spread
  - d. Burning rates
  - e. Fire plumes
  - f. Fire analysis
6. Building construction
  - a. Types of construction
  - b. Building materials
  - c. Building components
7. Fire protection systems
  - a. Extinguishment systems
  - b. Detection systems
  - c. Signaling systems
  - d. Other building services
8. Basic principles of electricity
  - a. Basic electricity
  - b. Wiring systems
  - c. Common electrical systems
9. Health and safety
  - a. Methods of identification
  - b. Common causes of accidents
  - c. Common causes of injuries
10. Fire scene investigations
  - a. Examining the fire scene
  - b. Securing the fire scene
  - c. Documenting the fire scene
  - d. Evidence collection and preservation
  - e. Exterior examination
11. Determining point of origin
  - a. Interior examination
  - b. Area of origin
  - c. Fire patterns
  - d. Other indicators
  - e. Scene reconstruction
  - f. Point of origin
12. Types of fire causes
  - a. Accidental
  - b. Natural
  - c. Incendiary
  - d. Undetermined
13. Vehicle fires
  - a. Examination of scene
  - b. Examination of exterior

- c. Examination of driver and passenger area
- d. Examination of engine compartment
- e. Examination of fuel system
- f. Examination of electrical system

## **Required materials**

This course requires students to purchase a textbook.