National Fire Academy

F0770 – Fire Investigation: First Responders
Version: 1st Edition, 6th Printing, April 2023
Quarter:
ACE Credit: In the lower-division baccalaureate/associate degree category, 1 semester hour in public safety administration.
IACET Continuing Education Units: 1.4

Length of Course: 2 Days (14 hr. contact hours)
Prerequisite: None
Curriculum: Fire Investigation
Training Specialist: Kevin Oliver
Instructor:
Instructor email/phone: Kevin.Oliver@fema.dhs.gov / 301-447-1613
Classroom: J-
Meeting Time: 8 AM – 5 PM

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Course Description (Catalog)

F0770 – "Fire Investigation: First Responders." This two-day course presents a basic overview of a fire investigation. Students will review the basics of fire chemistry and develop an understanding of the role of the first responder in relation to fire suppression and fire investigation. The course will stress the importance of fire scene awareness, evidence identification, preservation and the basics of a fire investigation. Students will develop an appreciation for the convergence of suppression, investigation, science and law.

Student Qualifications (Primary and Secondary Audience)

The target audience for "Fire Investigation: First Responders" (FI: FR) is first responders and their advancement in the professional development of fire, rescue and emergency service personnel, as well as the mitigation of loss of life and property from fire and other hazards. An integral part of the program is training and professional development in fire and life safety education programs/courses.

Course Scope (Goal)

The goal of this course is to enable students to identify and define key concepts of fire investigation specifically as they relate to the scientific method, scene preservation and the role of the first responder.

The scope of this course is to provide first responders with the fundamental understanding of the principles, processes and procedures involved in fire scene examination.

Course Objectives (Course Learning Outcomes – TLOs)

After successfully completing this course, you will be able to accomplish the following:

- Evaluate how the role of first responder relates to the fundamentals of fire investigation.
- Evaluate the impact of fire dynamics on the fire investigation.
- Consider the process of a fire scene investigation.
- Develop an understanding of potential issues and hazards affecting the first responder that relate to fatal fires, trauma, behavioral health, arson and social media.
- Evaluate a fire scene and identify evidence applicable to determining the origin of the fire.

Course Delivery Method

The NFA offers specialized training courses and advanced management programs of national impact in an academic classroom environment on campus at the National Emergency Training Center (NETC) in Emmitsburg, Maryland and through their state, local, tribal and U.S. territories training partners. All course materials are designed for interactive classroom environments, in either paper notebook or electronic formats.

Course Schedule

The purpose of the course schedule is to give you, at a glance, the required preparation, activities and evaluation components of your course.

DAY 1	DAY 2
Introduction, Welcome and Administrative	Unit 3: The Fire Scene
Break	*Break*
Unit 1: Overview of Fire Investigation and National Fire Protection Association 921/1033	Unit 3: The Fire Scene (cont'd)
Break	*Break*
Unit 1: Overview of Fire Investigation and National Fire Protection Association 921/1033 (cont'd)	Unit 3: The Fire Scene (cont'd)
Lunch	*Lunch*
Unit 2: Fire Science	Unit 3: The Fire Scene (cont'd) Unit 4: Uncomfortable Fire Investigation Topics
Break	*Break*
Unit 2: Fire Science (cont'd) Activity 2.1: Candle Experiment	Unit 4: Uncomfortable Fire Investigation Topics (cont'd) Unit 5: Making the Call

Note: This schedule is subject to modification by the instructors and approved by the training specialist.

Course Resources (Instructional Materials)

In order to be fully prepared, obtain a copy of the required textbooks and other instructional materials prior to the first day of class.

Required Readings

The student must complete required readings during the course to be able to thoughtfully participate in discussions and activities.

None.

Suggested Reading/Resources

Suggested readings and resources are not evaluated, but may enhance the student's understanding, serve as additional sources for citation and promote discussion of course material.

None.

Required Resources (Course Textbook)

Student Manual.

Supplemental Resources (Supplemental Course Textbook)

None.

Grading Methodology (Evaluation Procedures)

The required performance to successfully complete the course is attained by completing the class with a letter grade of a "C" or higher.

Letter Grade	Point Range
A	90-100
B	80-89
C	70-79
F	69 or lower

Required Reading Assignments

N/A

Suggested Readings

N/A

Course Outline

Introduction (Day 1)

Objectives

None.

Unit 1: Overview of Fire Investigation and National Fire Protection Association 921/1033 (Day 1)

Objectives

Terminal Objective

The students will be able to:

1.1 Evaluate how the role of first responder relates to the fundamentals of fire investigation.

Enabling Objectives

The students will be able to:

1.1 Establish the scope of roles and associated actions for fire investigation response.

1.2 Use an understanding of the fire investigation profession to interpret the limitations on the first responder.

1.3 Compare national guides and standards related to fire investigation.

1.4 Summarize the responsibilities associated with fire investigation and testifying as a fact or expert witness.

Unit 2: Fire Science (Day 1)

Objectives

Terminal Objective

The students will be able to:

2.1 Evaluate the impact of fire dynamics on the fire investigation.

Enabling Objectives

The students will be able to:

2.1 Define fire.

2.2 Correlate the components of the fire tetrahedron with fire development.

2.3 Classify each phase of fire development related to the fuel and ventilation available.

2.4 Explain the three methods of heat transfer.

2.5 Summarize the relationship between fire dynamics, firefighter actions and the fire investigation.

Unit 3: The Fire Scene (Day 2)

Objectives

Terminal Objective

The students will be able to:

3.1 Consider the process of a fire scene investigation.

Enabling Objectives

The students will be able to:

3.1 Assess the fire scene activities of the first responder in relation to the fire investigation.

3.2 Summarize the process by which data is identified, documented and preserved during the process of a fire scene investigation.

3.3 Explain the three types of information that can assist with determining the origin of a fire as outlined in National Fire Protection Association (NFPA) 921, *Guide for Fire and Explosion Investigations.*

3.4 Evaluate potential factors impacting responsibility determinations.

Unit 4: Uncomfortable Fire Investigation Topics (Day 2)

Objectives

Terminal Objective

The students will be able to:

4.1 Develop an understanding of potential issues and hazards affecting the first responder that relate to fatal fires, trauma, behavioral health, arson and social media.

Enabling Objectives

The students will be able to:

4.1 Recognize the importance of managing a fire scene that involves a fatal fire or line-of-duty death (LODD).

4.2 Recognize the roles and responsibilities in managing a fatal fire scene and review the data regarding LODDs.

4.3 Consider the repercussions of secondary trauma on first responders and the people around them.

4.4 Recognize the issues and responsibilities associated with firefighter arson.

4.5 Explain the potential perils associated with social media misuse.

Unit 5: Making the Call (Day 2)

Objectives

Terminal Objective

The students will be able to:

5.1 Evaluate a fire scene, and identify evidence applicable to determining the origin of the fire.

Enabling Objectives

The students will be able to:

5.1 Compare fire patterns.

5.2 Choose an area of origin based on the information provided.

Policies

Class Attendance and Cancellation Policy

Attendance

- You are required to attend all sessions of the course. If you do not, you may not receive a certificate.

- If you need to depart the training facility early and miss any portion of the course, you must make the request in writing to the sponsoring agency (e.g., state training director, etc.). The state training director may waive the attendance requirement in order to accommodate you with extraordinary circumstances as long as you complete all course requirements.

Course Failure

You can reapply for the failed course or any other NFA course and go through the random selection process. You do not have to successfully complete the failed course before attending another NFA course.

Student Code of Conduct Policy

Students, instructors and staff are expected to treat each other with respect at all times. Inappropriate behavior will not be tolerated.

Writing Expectations

Student writing will conform to the generally accepted academic standards for college papers. Papers will reflect the original work of the student and give appropriate credit through citations for ideas belonging to other authors, publications or organizations. Student written work should be free of grammatical and syntax errors, free of profanity or obscene language or ideas, and reflect critical thinking related to the course subject matter.

Citation and Reference Style

Attention Please: Students will follow the "Publication Manual of the American Psychological Association," Sixth Edition as the sole citation and reference style used in written work submitted as part of coursework to NFA. Assignments completed in a narrative essay, composition format, abstract and discussion posts must follow the citation style cited in the "Publication Manual of the American Psychological Association," Sixth Edition.

Late Assignments

All assignments must be turned in by the established deadline. Late submissions could result in a 10% decrease in grade.

Disclaimer Statement

Course content may vary from the outline to meet the needs of this particular group.

Grading

Please review the following rubrics that explain how grades will be awarded.

Students who do not complete the entire course will be awarded an Incomplete (I) grade. In accordance with NFA academic policies, an Incomplete (I) grade must be removed by the end of the next semester following the course, or it automatically becomes a Failing (F) grade.

https://www.usfa.fema.gov/training/nfa/admissions/student_policies.html

Academic Honesty

Students are expected to exhibit exemplary ethical behavior and conduct as part of the NFA community and society as a whole. Acts of academic dishonesty including cheating, plagiarism, deliberate falsification and other unethical behaviors will not be tolerated.

Students are expected to report academic misconduct when they witness a violation. All cases of academic misconduct shall be reported by the instructor to the state training director or host agency and to the NFA Training Specialist.

If a student is found to have engaged in misconduct and the allegations are upheld, the penalties may include, but are not limited to one or a combination of the following:

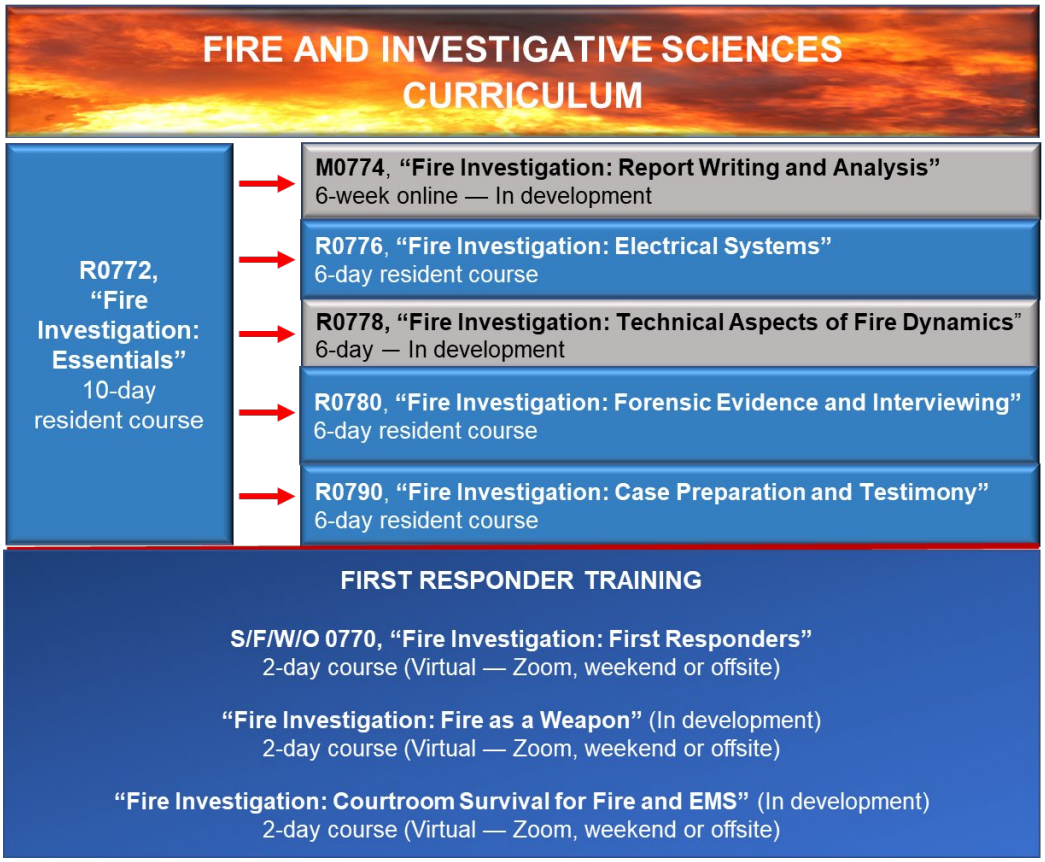
- Expulsion.
- Exclusion from future classes for a specified period; depending on the severity it could range from one to 10 years.
- Forfeiture of certificate for course(s) enrolled in at NETC.

Refer to NFA-specific Standard Operating Procedure 700.1 – *Academic Code of Conduct and Ethics* for more information.

Fire and Investigative Sciences Curriculum

The NFA hosted a comprehensive curriculum review of the Fire and Investigative Sciences Curriculum with renowned, national experts. The review focused on an assessment of national needs, duplications, gaps in existing programs and training; performed a detailed technical review and audit of NFA's existing course materials; and prepared a short- and long-range plan for NFA's current and future Fire and Investigative Sciences programs and curriculum that will meet national training and service needs. NFA works collaboratively on all curriculum updates with our trusted partner, the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF), Fire Programs and Training Branch.

As a result of the review, a Professional Fire Investigator career track was created to align the needs within the profession and in the field with the needs of current investigators:



Course Descriptions

Fire Investigation: Essentials (R0772)

This 10-day course is the foundation of the Fire and Investigative Sciences Curriculum. The course utilizes NFPA 921, *Guide for Fire and Explosion Investigations*, and NFPA 1033, *Standard for Professional Qualifications for Fire Investigator*, and other professional documents

to address the technical and scientific knowledge and skills needed to conduct successful fire/arson investigations.

Using a combination of classroom instruction, activities, written assignments and group projects, students will demonstrate the ability to conduct science-based fire investigations that culminate, when appropriate, in prosecution for the crime of arson. Outdoor activities will require students to have work clothes and boots and be capable of processing a fire scene (bending, kneeling and lifting up to 50 pounds). Successful completion of this course satisfies the education and testing requirements for IAAI-FIT certification.

Fire Investigation: Report Writing and Analysis (M0774) — IN DEVELOPMENT

This six-week, instructor-led, online course will enable fire investigators to prepare, review and critique fire investigation reports. Students will develop and revise reports in accordance with NFPA 921 and 1033. Students' reports will undergo a technical and legal review and be presented to an expert in the field of fire investigation. It is anticipated that this course will require up to eight hours of self-directed work per week. R0774 will expand upon concepts presented in R0772, "Fire Investigation: Essentials" (FI: E).

Fire Investigation: Electrical Systems (R0776)

This six-day, specialized course addresses the critical skills essential to the effective investigation and evaluation of fires involving potential electrical fire causes. Students will demonstrate current techniques, practices, protocols and standards that assist investigators in the evaluation of electrical systems and associated components. Outdoor activities will require students to have work clothes and boots, participate in a series of practical activities that involve working with tools and electrical test equipment, and be capable of processing a fire scene (bending, kneeling, and lifting up to 50 pounds). R0776 expands upon concepts presented in R0772, FI: E.

Fire Investigation: Technical Aspects of Fire Dynamics (R0778) — IN DEVELOPMENT

This six-day, specialized course will enable investigators to develop a forensic analysis of a fire scene based on evidence, fire dynamics and related fire scene analysis best practices. The course provides an overview of scene documentation, timeline development, fire dynamics in structures, standardized testing, and physical and computational fire modeling. Outdoor activities require students to have work clothes and boots and be capable of processing a fire scene (bending, kneeling and lifting up to 50 pounds). The instruction uses current techniques, procedures, protocols, and standards to aid the fire investigator. R0778 expands upon concepts presented in R0772, FI: E.

Fire Investigation: Forensic Evidence and Interviewing (R0780)

This six-day, specialized course will address critical skills essential to fire investigation to include interviewing strategies and the identification, collection, packaging, preservation, processing and testing of evidence from a fire and/or crime scene. Using a combination of

classroom instruction, activities, written assignments and projects, students will demonstrate the ability to conduct science-based fire investigations with the application of current practices in the forensics investigation field. Outdoor activities require students to have work clothes and boots and be capable of processing a fire scene (bending, kneeling and lifting up to 50 pounds). Successful completion of this course satisfies the education and testing requirements for IAAI Evidence Collection Technician (ECT) certification. R0780 expands upon concepts presented in R0772, FI: E.

Fire Investigation: Case Preparation and Testimony (R0790)

This six-day course is an intense, interactive and realistic experience providing students with case development, case review, and the knowledge and skills to prepare to testify as an expert. This course is offered in a blended format; students are assigned a cold case file two weeks prior to arrival with corresponding course work. Once students arrive on campus, they will use the case file to complete an expert origin and cause report from which the student will provide testimony in a courtroom setting. Students who fail to complete the pre-arrival distance learning activities will be removed from the in-residence portion of the course and forfeit stipend reimbursement. Successful completion of this course satisfies the requirements of the IAAI for Expert Testimony. This course expands upon concepts presented in FI: E (R0772). Students seeking additional interviewing, evidence, and data collection instruction should consider the new course "Fire Investigation: Forensic Evidence and Interviewing" (FI: FEI) (R0780).

The Fire and Investigative Sciences Curriculum also offers a 2-day course for first responders. This course is not considered part of the professional track; however, it does meet a critical, national need. Response personnel considering a career in fire investigation are strongly encouraged to attend the 2-day course.

Fire Investigation: First Responders (F/O/S/W 0770)

This two-day course presents a basic overview of a fire investigation. Students will review the basics of fire chemistry and develop an understanding of the role of the first responder in relation to fire suppression and fire investigation. The course will stress the importance of fire scene awareness, evidence identification, preservation and the basics of a fire investigation. Students will develop an appreciation of the convergence of suppression, investigation, science and law.

Fire Investigation: Fire as a Weapon — IN DEVELOPMENT

This two-day course was developed to aid first responders in understanding and recognizing how fire can be used as a weapon against people and/or property. This course should also help first responders and investigators understand why a person would choose to use fire as a weapon, as well as creating awareness of the types of information fire investigators may need from fire and emergency services personnel.

Fire Investigation: Courtroom Survival for Fire and EMS — IN DEVELOPMENT

This two-day course will assist fire and emergency medical services (EMS) personnel in understanding the importance of proper documentation of fire and EMS-related incidents. The course will provide fire and EMS personnel with a general walk-through of the trial process. Further, it will aide fire and EMS personnel in understanding the difference between lay (fact) and expert witnesses and how to avoid the "traps" of offering opinions that the first responder is not qualified to offer.