



# National Fire Academy

**R0790 – Fire Investigation: Case Preparation and Testimony**

**Version: 1st Edition, 4th Printing, April 2022**

**Quarter:**

**ACE Credit: In the upper-division baccalaureate degree category, 3 semester hours in fire science.**

**IACET Continuing Education Units: 5.3**

**Length of Course: 2 Weeks-Pre-course Work and 6 Days in Residence (10 hrs., pre-course and 43 hrs., 5 min., contact hours, Sunday – Friday)**

**Prerequisite: Yes**

**Curriculum: Fire Investigation**

**Training Specialist: Kevin Oliver**

**Instructor:**

**Instructor email/phone: [Kevin.Oliver@fema.dhs.gov](mailto:Kevin.Oliver@fema.dhs.gov)/301-447-1613**

**Classroom: J-**

**Meeting Time: 8 AM – 5 PM**

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## Course Description (Catalog)

R0790 – “Fire Investigation: Case Preparation and Testimony.” This six-day course is an intense, interactive, and realistic experience providing students with case review, case development, and the knowledge and skills to prepare to testify as an expert witness. 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. Each student will receive a video file of their expert testimony.

Successful completion of this course satisfies the requirements of the International Association of Arson Investigators (IAAI) for Expert Testimony.

### **Student Qualifications (Primary and Secondary Audience)**

Priority will be reserved for full-time public service personnel who have fire/arson investigations as one of their primary responsibilities and have completed the National Fire Academy's (NFA's) "Fire Investigation: Essentials" (FI: E), R0772. Non-NFA graduates or applicants who are not employed full-time with fire/arson investigations as one of their primary responsibilities will be required to complete a minimum of 120 hours of Fire Investigation training from a professional association or state agency. Students should also consider taking "Fire Investigation: Report Writing and Analysis" (M0774).

Students are required to provide a CFI Trainer transcript for the following courses with the initial application.

- Critical Thinking Solves Cases.
- The Deposition Part 1: Format, Content and Preparation.
- The Deposition Part 2: Questioning, Tactics and Effective Responses.
- Effective Investigation and Testimony.
- Ethical Duties Beyond the Fire Scene.
- Ethics and the Fire Investigator.
- Magnitek: A Case Study in the Daubert Challenge.
- Process of Elimination.

### **Course Scope (Goal)**

The purpose of this course is to equip students with investigative techniques, knowledge, and skills necessary to prepare to testify as an expert during legal proceedings. Course content provides an intense, interactive, and realistic experience expanding upon the concepts presented in FI: E.

Note: Students seeking specialized training for interviewing strategies should register for a new six-day course, "Fire Investigation: Forensic Interviewing and Evidence" (FI: FIE) (R0780), currently under development.

## **Course Objectives (Course Learning Outcomes – TLOs)**

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

- Distinguish among the various types of court proceedings, the roles of courtroom personnel, trial procedures, and the presentation of professional witness expert testimony.
- Using the scientific method, formulate a defensible origin and cause hypothesis from a fire case file.
- Create and present a fire investigation case that can withstand legal challenge.
- Integrate knowledge, strategies, and skills to effect admissible and reliable expert witness testimony.
- Simulate expert testimony in an intense and realistic mock trial setting.
- Perform and present a self-evaluation of expert testimony performance.

## **Course Delivery Method**

This blended course uses an online Learning Management System, Blackboard. Pre-course work will be assigned and completed online prior to arrival.

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. This is a blended course with pre-course work, followed by a six-day, on-campus, instructor-led delivery.

Students will be provided course materials to review prior to the start of each offering. Students will be expected to bring their laptop or tablet, capable of Wi-Fi access, and the most current versions of Microsoft Office (Word, PowerPoint are used) to fully participate in class. Additionally, students will take exams on the devices and can potentially receive communications via the web-based Blackboard learning system.

During the six-day delivery, students will reside in dormitories provided on campus with classes conducted in classrooms designed for critical student/instructor interaction. All course materials are designed for interactive classroom environments, in various electronic formats.

A binder for each case file will be available in hard copy for students to review. No other paper copies of any course materials will be available. Students may print any materials ahead of time to bring to class. Students are encouraged to take notes electronically in the PDF manuals provided.

## 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.

WEEK 1 – PRE-COURSE	WEEK 2 – PRE-COURSE
<p><b>Orientation:</b> Students complete Introduction unit in Blackboard, watch Orientation video, agree to Academic Integrity and Human Dignity statements, execute non-disclosure agreement, syllabus.</p> <p><b>Videos:</b> Case File Introduction. Report Writing.</p> <p><b>Required reading:</b> Posted in Blackboard.</p> <p><b>Discussion board post:</b> Identify three challenges that a fire investigator may face when assigned a no-scene/fire-scene.</p> <p><b>Case file access:</b> (Students assigned case in Blackboard.)</p> <p>#101 Magnolia Street #102 Dogwood Drive #103 Century Blvd. #104 Commerce Parkway #105 Mountain View Road</p>	<p><b>CV submission:</b> Upload an updated CV.</p> <p><b>Essay Assignment Due End of Week 2:</b></p> <ul style="list-style-type: none"> <li>• List and describe at least three hypotheses regarding the origin and cause of assigned case.</li> <li>• References should include Chapters 4 and 5 of National Fire Protection Association (NFPA) 921, <i>Guide for Fire and Explosion Investigations</i>.</li> </ul> <p><b>Origin and Cause Report:</b> The essay assignment is designed to position students for successful completion of an Origin and Cause Report assignment, which is due Day 2 of class. Assignment requirements are addressed in the Case File Introduction Video from Week 1.</p> <p>Report will require references.</p>

Note: Students who do not complete pre-course work on time may be turned away upon campus arrival.

<b>TIME</b>	<b>DAY 1</b>	<b>TIME</b>	<b>DAY 2</b>
8:00 - 9:30	Unit 1: Introduction	8:00 - 9:30	Students work on origin and cause report with photos and case materials in class. Activity 4.1: Origin and Cause Report (cont'd) Final Report due by 11:30 am
	<i>Break</i>		<i>Break</i>
9:30 - 10:30	Unit 2: Courtroom Introduction	9:30 - 11:30	Activity 4.1: Origin and Cause Report (cont'd)
10:30 - 11:30	Unit 3: Case File Introduction		
11:30 - 12:30	<i>Lunch</i>	11:30 - 12:30	<i>Lunch</i>
12:30 - 1:00	Unit 4: Case Development	12:30 - 5:00	Activity 4.2: Technical Review and Question Development
	<i>Break</i>		<i>Break</i>
2:30 - 5:00	Students work on origin and cause report with photos and case materials in class. Activity 4.1: Origin and Cause Report	12:30 - 5:00	Attorney case work preparation

<b>TIME</b>	<b>DAY 3</b>	<b>TIME</b>	<b>DAY 4</b>
8:00 - 10:00	Unit 5: Legal Considerations – Panel Discussion	8:00 - 10:00	Unit 6: Student Testimony Activities (cont'd) Activity 6.3: Mock Trial Testimony Exercise (Trial 1)
	<i>Break</i>		<i>Break</i>
10:00 - 11:30	Unit 5: Legal Considerations – Panel Discussion (cont'd)	10:00 - 12:00	Activity 6.3: Mock Trial Testimony Exercise (Trial 1) (cont'd)
11:30 - 12:30	<i>Lunch</i>	12:00 - 1:00	<i>Lunch</i>
12:30 - 2:30	Unit 6: Student Testimony Activities Activity 6.1: Expert Qualification - Curriculum Vitae	1:00 - 2:30	Activity 6.3: Mock Trial Testimony Exercise (Trial 2)
	<i>Break</i>		<i>Break</i>
2:30 - 5:30	Activity 6.2: Deposition	2:30 - 5:00	Activity 6.3: Mock Trial Testimony Exercise (Trial 2) (cont'd)

<b>TIME</b>	<b>DAY 5</b>	<b>TIME</b>	<b>DAY 6</b>
8:00 - 10:00	Unit 6: Student Testimony Activities (cont'd) Activity 6.3: Mock Trial Testimony Exercise (Trial 3)	8:00 - 10:00	Unit 7: Final Presentation
	<i>Break</i>		<i>Break</i>
10:00 - 12:00	Activity 6.3: Mock Trial Testimony Exercise (Trial 3) (cont'd)	10:00 - 12:00	Unit 7: Final Presentation (cont'd)
12:00 - 1:00	<i>Lunch</i>	12:00 - 1:00	<i>Lunch</i>
1:00 - 3:00	Activity 6.3: Mock Trial Testimony Exercise (Trial 4)	1:00 - 3:00	Class Assessment, Hot wash, Evaluations, Certificate Presentation
	<i>Break</i>		<i>Break</i>
3:00 - 5:00	Activity 6.3: Mock Trial Testimony Exercise (Trial 4) (cont'd)	3:00 - 5:00	Travel

## Course Resources (Instructional Materials)

- Students are expected to have access to their own copies of NFPA 921, *Guide for Fire and Explosion Investigations*, and NFPA 1033, *Standard for Professional Qualifications for Fire Investigator*, prior to class to prepare and to complete pre-course work.
- Students are expected to bring copies of NFPA 921 and NFPA 1033 to class.
- Students are expected to conduct additional research using their own resources, the internet, and/or the campus library when they arrive.

## Grading Methodology (Evaluation Procedures)

Both formal and informal evaluations are conducted throughout the course and are an essential component as they provide real-time feedback in an experiential learning environment.

In addition to the formal, graded evaluations described below, students are provided additional practice and informal feedback during the voir dire, deposition, and mock trial testimony activities. These include peer, instructor, and self-evaluation. Attorney/instructors will provide verbal feedback on testimony and comment on case projects. Student peers serve as members of a mock jury and complete Testimony Evaluation forms that are given to each student after their testimony.

A minimum of 80% is required for successful completion of this course. The total course score is derived from the following assignments:

Evaluation Method	Percent of Final Grade
Discussion Board Post	5%
Essay Assignment	15%
Origin and Cause Report	20%
Mock Trial Testimony	50%
Final Presentation	10%

## **Course Outline**

### **Unit 1: Introduction (Day 1)**

#### **Objectives**

None.

### **Unit 2: Courtroom Introduction (Day 1)**

#### **Objectives**

##### **Terminal Objective**

The students will be able to:

- 2.1 Distinguish among the various types of court proceedings, the roles of courtroom personnel, trial procedures, and the presentation of professional witness expert testimony.

##### **Enabling Objectives**

The students will be able to:

- 2.1 Explain the different types of court proceedings.
- 2.2 Assess the trial process.
- 2.3 Categorize the roles of courtroom personnel.
- 2.4 Consider appropriate professional courtroom demeanor.
- 2.5 Defend against common cross-examination strategies.

### **Unit 3: Case File Introduction (Day 1)**

#### **Objectives**

##### **Terminal Objective**

The students will be able to:

- 3.1 Using the scientific method, formulate a defensible origin and cause hypothesis from a fire case file.

### **Enabling Objectives**

The students will be able to:

- 3.1 Evaluate case file contents.
- 3.2 Design a systematic methodology to examine, decipher, prioritize, consolidate and summarize case file contents.
- 3.3 Compose a thorough and accurate report that can be defended during a deposition and mock trial testimony.

### **Unit 4: Case Development (Day 1)**

#### **Objectives**

#### **Terminal Objective**

The students will be able to:

- 4.1 Create and present a fire investigation case that can withstand legal challenge.

#### **Enabling Objectives**

The students will be able to:

- 4.1 Demonstrate fire investigation and case development essentials.
- 4.2 Consider data for analysis.
- 4.3 Prepare an expert report for use throughout the legal process.

### **Unit 5: Legal Considerations – Panel Discussion (Day 3)**

#### **Objectives**

#### **Terminal Objective**

The students will be able to:

- 5.1 Integrate knowledge, strategies, and skills to effect admissible and reliable expert witness testimony.

### **Enabling Objectives**

The students will be able to:

- 5.1 Anticipate the legal issues that will affect a fire investigator's case.
- 5.2 Evaluate the impact of the Fifth and Sixth Amendments to the Constitution and Miranda.
- 5.3 Summarize expert testimony constraints imposed by Federal Rules of Evidence (FRE) 701 and 702.
- 5.4 Distinguish between a fact witness and an expert witness.
- 5.5 Integrate issues and expert witness challenges.

### **Unit 6: Student Testimony Activities (Day 3)**

#### **Objectives**

#### **Terminal Objective**

- 6.1 Simulate expert testimony in an intense and realistic mock trial setting.

#### **Enabling Objectives**

- 6.1 Demonstrate credible fire investigation knowledge.
- 6.2 Demonstrate effective communication skills within a courtroom.
- 6.3 Demonstrate professional courtroom demeanor.

### **Unit 7: Final Presentation (Day 6)**

#### **Objectives**

#### **Terminal Objective**

- 7.1 Perform and present a self-evaluation of expert testimony performance.

#### **Enabling Objectives**

- 7.1 Evaluate individual courtroom testimony.
- 7.2 Compose presentation of analysis and results.

## **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, and your stipend may be denied.
- If you need to depart campus early and miss any portion of the course and/or graduation, you must make the request in writing to the NFA training specialist. The training specialist, in collaboration with the superintendent, may waive the attendance requirement in order to accommodate you with extraordinary circumstances as long as you complete all course requirements. If you receive approval for departing early, you must forward the approval to the Admissions Office so your stipend reimbursement is not limited.

#### **Student Substitutions**

Substitutions for NFA courses are made from waiting lists; your department can't send someone in your place.

#### **Cancellations or No-Shows**

NFA's mission for delivery of courses is impaired significantly by cancellations and no-shows. It is very difficult and costly to recruit students at the last minute. Currently there is a two-year ban on student attendance for students who are no-shows or cancel within 30 days of the course start date without a valid reason. If you receive such a restriction, your supervisor needs to send a letter to our Admissions Office explaining the cancellation/no-show.

#### **Course Failure**

If you fail an on-campus course, you will not be issued a stipend for that course. You can reapply for the failed course or any other NFA course and go through the random selection process. You don't 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 and may result in removal from campus and denial of stipends.

#### **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**

Students are expected to submit classroom assignments by the posted due date and time and to complete the course according to the published class schedule. As adults, students, and working professionals, you must manage competing demands on your time.

### **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.

If you fail an on-campus course, you will not be issued a stipend for that course. You can reapply for the failed course or any other NFA course and go through the random selection process. You don't have to successfully complete the failed course before attending another NFA course.

[http://www.usfa.fema.gov/training/nfa/admissions/student\\_policies.html](http://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 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,
- withholding of stipend or forfeiture of stipend paid,
- exclusion from future classes for a specified period; depending on the severity it could range from 1-10 years, and/or
- 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.

## Grading Rubrics

### Discussion Post Grading Rubric

Students will post a well-developed, referenced, and grammatically correct discussion post which identifies three challenges faced by an investigator when they cannot go to the actual fire scene, nor can they further interview witnesses. Students will comment on 2 other student's initial posts.

<b>Evidenced Understanding and Critical Thinking</b>  <b>5 Points</b>	<b>Marginal Comprehension</b>  <b>3 points</b>	<b>Limited Comprehension</b>  <b>0 Points</b>
<p>Initial post was well-developed, referenced, and grammatically correct.</p> <p>Initial post identified three challenges.</p> <p>Prepared a well-developed paragraph-length comment for at least two classmates' published posts.</p>	<p>Failed to provide any <b>one</b> of the following:</p> <p>Initial post was well-developed, referenced, and grammatically correct.</p> <p>Initial post identified three challenges.</p> <p>Prepared a well-developed paragraph-length comment for at least two classmates' published posts.</p>	<p>Failed to provide <b>two or more</b> of the following:</p> <p>Initial post was well-developed, referenced, and grammatically correct.</p> <p>Initial post identified three challenges.</p> <p>Prepared a well-developed paragraph-length comment for at least two classmates' published posts.</p>

## Essay Grading Rubric

Students will complete an essay question relating to the identification, discussion, and validity of three hypotheses regarding the origin and causation of their assigned case file fire. In addition to NFPA 921, Chapters 4 and 5, students will reference their discussion using NFPA 921 and at least one other published source.

Question	Ratings		
	15 points	12 - 14 points	10 points (less if incomplete)
Identify, describe, and discuss three hypotheses relating to the origin and causation of the fire scene as described in your case file.	<p><b>Evidence of understanding and critical thinking:</b></p> <ul style="list-style-type: none"> <li>• Response includes discussion of three origin/causation hypotheses.</li> <li>• Demonstrated application of the Scientific Method in response.</li> <li>• Identified and discusses any heat release rate (HRR) or fire dynamics factors influencing hypotheses.</li> <li>• Identified and discusses the effects of ventilation as related to fire development.</li> <li>• If applicable, provided thorough explanation of the significance of burn patterns to hypotheses.</li> <li>• If applicable, provided summary incorporation of witness statements to development of hypotheses.</li> <li>• Used at least two references.</li> <li>• Grammatically correct response.</li> </ul>	<p><b>Marginal comprehension:</b></p> <ul style="list-style-type: none"> <li>• Provided only two origin/causation hypotheses.</li> <li>• Partially applies Scientific Method in response.</li> <li>• Misapplies or misidentifies theories of HRR or heat transfer factors influencing hypotheses. OR</li> <li>• Incorrectly identifies or uses incorrect terminology to discuss ventilation effects.</li> <li>• If applicable, provided a partial explanation of the significance of observed burn patterns to hypotheses. OR</li> <li>• If applicable, provided partial or incomplete summary of witness statements to development of hypotheses.</li> <li>• References NFPA 921 only.</li> <li>• Multiple minor grammatical errors.</li> </ul>	<p><b>Limited comprehension:</b></p> <p>Any of the following:</p> <ul style="list-style-type: none"> <li>• Neglects a discussion of area of origin OR causation hypotheses.</li> <li>• Failed to demonstrate basic application of the Scientific Method in response.</li> <li>• No discussion of HRR or heat transfer factors influencing hypotheses.</li> <li>• No discussion of the effect of ventilation of fire growth and development.</li> <li>• If applicable, provided no explanation of the significance of observed burn patterns to hypotheses.</li> <li>• If applicable, failed to incorporate witness statements to development of hypotheses.</li> <li>• No references.</li> <li>• Grammatically incorrect response (major errors).</li> </ul>

## Origin and Cause Report Grading Rubric

Students will submit a comprehensive Origin and Cause Report for their assigned case. Students will begin developing the report prior to arriving on campus and will be afforded time to finalize the report in class. The quality of, and familiarity with, the report is essential to successful testimony.

Criteria	Critical Thinking and Comprehension 5 Points Per Section	Marginal Comprehension 3 Points Per Section	Insufficient Comprehension 0 Points Per Section
<b>Synopsis</b>	Writing demonstrates a clear, concise, and accurate summary of the facts, circumstances, and information provided in the case file.	<ul style="list-style-type: none"> <li>• Writing demonstrates a limited understanding of the facts of the case.</li> <li>• Writing is accurate but imprecise and confusing to the reader.</li> </ul>	Fails to include any synopsis or opening summary.
<b>Collect Data</b>			
<b>Witness Statements and Reports</b>	<ul style="list-style-type: none"> <li>• Summarizes the significant data contained in the case file.</li> <li>• Successfully uses witness statements and reports to support and/or exclude each hypothesis.</li> </ul>	<ul style="list-style-type: none"> <li>• Summarizes the significant data contained in the case file.</li> <li>• Successfully uses witness statements and reports to only support the final hypothesis. (Fails to apply to all hypotheses.)</li> </ul>	Missed critical evidence provided in the Witness Statements and/or Reports to support and/or exclude hypotheses.
<b>Evidence</b>	<ul style="list-style-type: none"> <li>• Identified most of the evidence relevant to the case.</li> <li>• Effectively used the evidence log to support report.</li> <li>• Effective identification of all evidence included in the case file.</li> <li>• Recognition of trace evidence or easily missed evidence as presented in the case file.</li> </ul>	<ul style="list-style-type: none"> <li>• Identified most of the evidence relevant to the case.</li> <li>• Failed to apply and/or evaluate all evidence contained on the evidence log.</li> </ul>	<ul style="list-style-type: none"> <li>• Failed to identify most of the evidence relevant to the case.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• Failed to use the evidence log.</li> </ul>
<b>Fire Patterns</b>	<ul style="list-style-type: none"> <li>• Provided thorough explanation of the significance of observed burn patterns to origin determination.</li> <li>• Correctly identified and (if reported) named significant burn patterns, and those names are as outlined in NFPA 921.</li> </ul>	Used nonstandard (non-NFPA 921) names or terminology to explain significant burn patterns.	<ul style="list-style-type: none"> <li>• Failed to reference NFPA 921 as a guide for the explanation of observed burn patterns.</li> <li>• Failed to relate the observed burn patterns to origin determination.</li> </ul>

<b>Ventilation</b>	<ul style="list-style-type: none"> <li>• Accurately described ventilation as related to fire development.</li> <li>• Writing demonstrates identification, evaluation, and assessment of ventilation principles, openings, and effects, as germane to specific fire development and proffered hypothesis.</li> <li>• Identifies or discussed ventilation affected patterns observed during the data review.</li> </ul>	Missed one area of higher criteria.	Missed two or more areas of higher criteria.
<b>Analyze Data</b>			
<b>Timeline</b>	<ul style="list-style-type: none"> <li>• Demonstrates thorough understanding of timeline analysis; inclusion of timeline analysis in the report.</li> <li>• Demonstrates thorough understanding of failure analysis; inclusion of failure analysis in the report if applicable.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimal timeline data considered and included in the report.</li> <li>• Minimal discussion of the application of failure analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Failed to address timeline, no evidence of failure analysis.</li> <li>• No integration of timeline or failure data.</li> </ul>
<b>Fire Dynamics</b>	<ul style="list-style-type: none"> <li>• Thoroughly and correctly described the method(s) of heat transfer as applied to the case file fire.</li> <li>• If applicable, accurately described plume development, as evidenced, and supported by convective and conductive heat transfer.</li> <li>• Identified factor(s) impacting HRR, in the compartment (radiant feedback, layer development, availability of combustion air).</li> <li>• Fire dynamics principles fully identified, developed, and explained in writing.</li> </ul>	<p>Higher criteria met with exception of:</p> <ul style="list-style-type: none"> <li>• Incorrectly identified/described one of the three concepts: radiant feedback, layer development, or availability of combustion air.</li> <li>• Failed to fully identify, develop, and explain fire dynamics factors in writing.</li> </ul>	Any area of higher criteria missed.

Develop/Test Hypothesis			
Origin	<ul style="list-style-type: none"> <li>• Demonstrated understanding, and application of the Scientific Method.</li> <li>• Identified a specific area of origin within the compartment.</li> <li>• Addressed alternate theories of origin location.</li> </ul>	<p>Higher criteria met with exception of:</p> <ul style="list-style-type: none"> <li>• Failed to address alternate origin location theories.</li> </ul>	<ul style="list-style-type: none"> <li>• Failed to identify a specific area of origin within the compartment.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• Unable to demonstrate application of the Scientific Method.</li> </ul>
Causation	<ul style="list-style-type: none"> <li>• Followed the Scientific Method and used a systematic approach to successfully determine a cause.</li> <li>• <b>Identified competent ignition source(s) and the circumstance(s) that brought the fuel and ignition source together.</b></li> <li>• If multiple ignition sources exist, explained.</li> <li>• Addressed alternate theories of ignition.</li> <li>• Writer does not confuse opinions of causation with classification of the fire.</li> </ul>	<p>Higher criteria met with exception of:</p> <ul style="list-style-type: none"> <li>• Failed to address alternate theories.</li> <li>• Failed to demonstrate evidence of hypothesis testing.</li> <li>• Confuses or misuses <b>Causation</b>-related content with <b>Classification</b> information as outlined in NFPA 921.</li> </ul>	<p>Unable to demonstrate application of the Scientific Method and a systematic approach to conduct a fire scene examination.</p>
Opinions	<ul style="list-style-type: none"> <li>• Expert opinions are clearly expressed.</li> <li>• Opinions relate directly to the facts at hand, in the specific case file.</li> <li>• Opinions are well supported by the totality and completeness of the written report.</li> <li>• <b>Fire must be classified as: Incendiary, Accidental, or Natural. (For purposes of this assignment, Undetermined is not acceptable.)</b></li> <li>• Writer does not confuse opinions of causation with classification of the fire.</li> </ul>	<p>Higher criteria met with exception of:</p> <ul style="list-style-type: none"> <li>• Opinions are not well developed or concisely stated.</li> <li>• Opinions are unsupported by the written report.</li> <li>• Confuses or misuses <b>Causation</b>-related content with <b>Classification</b> information as outlined in NFPA 921.</li> </ul>	<p>Higher criteria met with exception of:</p> <ul style="list-style-type: none"> <li>• No opinions provided.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• Opinions are unsupported, or inconsistent with the case facts as provided.</li> </ul>

<p><b>Writing</b></p>	<ul style="list-style-type: none"> <li>• Used accurate terminology throughout the report.</li> <li>• Organization of contents was contained within the appropriate report sections.</li> <li>• References were properly cited.</li> <li>• No grammatical errors.</li> </ul>	<p>Higher criteria met with exception of:</p> <ul style="list-style-type: none"> <li>• Limited grammatical errors.</li> </ul> <p>AND/OR</p> <ul style="list-style-type: none"> <li>• Improper citations.</li> </ul>	<ul style="list-style-type: none"> <li>• Inaccurate terminology used.</li> <li>• Poor organization.</li> </ul>
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Origin and Cause Report Grading Scale:

55 – 50 = A

49 – 44 = B

43 – 39 = C

38 – 33 = D

Note:

- The grade for this assignment will be weighted in the learning management system Blackboard to be 20% of the student’s final grade.
- Students will provide a technical, counter expert review of another student’s Origin and Cause Report. While this is not a graded activity, it has real-world applications and provides the attorneys with additional questions for consideration during the deposition and mock trial.

## Testimony Grading Rubric

Students will provide expert testimony in a mock trial setting. As an expert, the student will present their findings and conclusions, and will be subjected to both a direct and cross examination. The student will be challenged vigorously on their knowledge, training, experience, skill sets, and certainty of opinions.

Criteria	Ratings		
	25 points	15 points	5 points
<b>Specialized Knowledge</b>	<p>Effective comprehension and critical thinking:</p> <ul style="list-style-type: none"> <li>• Correctly uses fire investigation terminology and concepts.</li> <li>• Applies systemic-scientific approach to explanations about one's determined origin, cause and one's opinion(s).</li> <li>• Correctly states facts, observations, deductions and circumstances based upon evidence/ circumstances of one's case.</li> <li>• Cites field-respected publications and research to validate the report and testimony.</li> <li>• Establishes credibility by demonstrating preparation and a thorough knowledge of the report and supporting materials during testimony.</li> <li>• Was well versed and responsive as to use of applicable parts of authoritative resources (NFPA 921, 1033, Kirks, NFA studies/ reports, etc.)</li> </ul>	<p>Marginal comprehension:</p> <ul style="list-style-type: none"> <li>• Mixed or basic use of fire investigation terminology and concepts.</li> <li>• Marginal explanations on how followed the scientific-systemic approach to one's opinions.</li> <li>• Credibility by demonstrating basic preparation.</li> <li>• Somewhat unclear explanations and/or responses about case facts, and about ignition source and sequences.</li> <li>• Marginal use of respected authoritative resources/ research/product recalls validating one's report and one's testimony.</li> <li>• Demonstrates only basic familiarity with all reports, documents, evidence, and supporting materials.</li> </ul>	<p>Limited comprehension:</p> <ul style="list-style-type: none"> <li>• Fails to use fire investigation terminology and/or misstates concepts.</li> <li>• Appears unprepared or unfamiliar with the report and supporting materials during testimony.</li> <li>• Fails to apply scientific methodology.</li> <li>• Fails to provide minimal ignition source understanding or ignition sequence within response.</li> <li>• Fails to cite field-respected publications and research to validate the report and support testimony.</li> </ul>

<p style="text-align: center;"><b>Communication</b></p>	<p>Effective communication skills:</p> <ul style="list-style-type: none"> <li>• Spoke clearly and distinctly using (when appropriate) technical language and terms.</li> <li>• When using technical terms, explained each of them.</li> <li>• Appropriately presents and explains evidence to the Jury and attorneys. (i.e., stands, uses props, gestures, etc.)</li> <li>• Maintained control and pace of responses to all questions.</li> <li>• Established topic/Jury credibility by providing respectful/truthful/direct responses to attorney's simple and complex questions.</li> <li>• Refrains from interrupting or talking over counsel or judge.</li> <li>• Presented as an effective fire investigation teacher to the Jury and attorneys; answered related questions.</li> <li>• Presented thoughtful explanations of one's case facts/evidence.</li> <li>• Presented considered analysis and supported each conclusion (validated or discarded).</li> </ul> <p>Effectively answers questions of defendant's attorneys and appropriately explains contrasting facts from attorney's assumptions.</p>	<p>Marginal communication skills:</p> <ul style="list-style-type: none"> <li>• In limited instances, misstated technical words or concepts.</li> <li>• In limited instances, did not properly turn and teach the Jury about technical terms or concepts.</li> <li>• In limited instances, a.) did not control defendant's attorney's complex questions presented, b.) did not control the pace of the questions, and c.) did not negate assumptions/implications made within the attorneys questions; d.) "talked over" each other sometimes.</li> <li>• Few answers had long nonresponsive answers to attorney's questions.</li> <li>• Missed some Jurors on exhibits shown.</li> <li>• Voice needed to be louder.</li> <li>• Occasionally used technical terms to Jury without explanation. <ul style="list-style-type: none"> <li>– Hypothesis considered.</li> <li>– Interrogation.</li> <li>– Motives means and opportunity.</li> <li>– "Scientific" method.</li> <li>– Use of a trailer, etc.</li> </ul> </li> </ul>	<p>Limited communication skills:</p> <ul style="list-style-type: none"> <li>• Misuses technical terms.</li> <li>• Fails to speak clearly and distinctly.</li> <li>• Fails to appropriately address the Jury and attorneys.</li> <li>• Fails to maintain control of the pace of communication throughout the testimony.</li> <li>• Fails to establish credibility by providing disrespectful or dishonest responses.</li> <li>• On multiple occasions, interrupts or talks over counsel or judge.</li> <li>• Stated in trial that defendant asked for attorney.</li> <li>• Used technical terms without explanation.</li> <li>• Does not directly answer attorney's questions.</li> <li>• Was unable to keep one's voice up; unable to present exhibits and explanations to all Jurors.</li> </ul>
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<b>Demeanor</b>	<p>Effective demeanor:</p> <ul style="list-style-type: none"> <li>• Dresses neatly and professionally.</li> <li>• Maintains eye contact with questioner and Jury as required.</li> <li>• Was attentive and responsive to all questions.</li> <li>• Maintains a serious and professional demeanor at all times.</li> <li>• Does not appear anxious by fidgeting or any other distracting behavior.</li> <li>• Remained seated upright, calm/ professional affect, without being combative on attitude.</li> <li>• Properly observed courtroom decorum.</li> </ul>	<p>Marginal demeanor:</p> <ul style="list-style-type: none"> <li>• Clothes were appropriate but not polished.</li> <li>• Maintains eye contact most of the time.</li> <li>• Seemed sometimes not responsive to questions.</li> <li>• Maintains a serious and professional demeanor most of the time.</li> <li>• Displays minor anxious or distracting behavior.</li> <li>• Appeared to swivel in seat; sounded/appeared during questioning with unhelpful attitude.</li> <li>• Was struggling to look and teach the Jury.</li> <li>• Observed some courtroom decorum.</li> </ul>	<p>Limited demeanor:</p> <ul style="list-style-type: none"> <li>• Fails to dress neatly and professionally.</li> <li>• Fails to maintain eye contact most of the time.</li> <li>• Fails to remain attentive and alert at all times.</li> <li>• Fails to maintain a serious and professional demeanor.</li> <li>• Displays anxious or distracting behavior. (Example, extreme fidgeting, failure to remove noisy items from pockets, gum chewing, etc.)</li> <li>• Fails to remain calm and noncombative, refuses to answer questions.</li> <li>• Fails to observe all courtroom decorum. (Example, fails to stand.)</li> </ul>
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Testimony Grading Scale:

- 75 – 68 = A
- 67 – 60 = B
- 59 – 53 = C
- 52 – 45 = D

Note: The grade for this assignment will be weighted in the learning management system Blackboard to be 50% of the student’s final grade.

## Final Presentation Grading Rubric

Students will create a ten-minute, reflective presentation based on a self-selected video clip of their courtroom testimony. Students will play the selected video clip for the class and then discuss their impressions of the video, their options for improvement, or how they may handle the exchange differently in a future trial. This is a graded activity, with a grade of pass/fail.

Pass	Fail
<p>Evidence of understanding and critical thinking:</p> <ul style="list-style-type: none"> <li>• Student effectively used 60- to 90-second video clip of courtroom testimony.</li> <li>• Reflective presentation, demonstrating serious thought and self-introspection.</li> <li>• Demonstrated a well-planned, clear and concise presentation.</li> <li>• Demonstrated effective presentation skills.</li> </ul>	<p>Any of the following:</p> <ul style="list-style-type: none"> <li>• Failed to use video clip in student presentation.</li> <li>• Presentation was non-reflective, demonstrating lack of serious thought or self-introspection.</li> <li>• Unclear, rambling, or disjointed presentation.</li> <li>• Evidence of student not taking assignment seriously.</li> </ul>

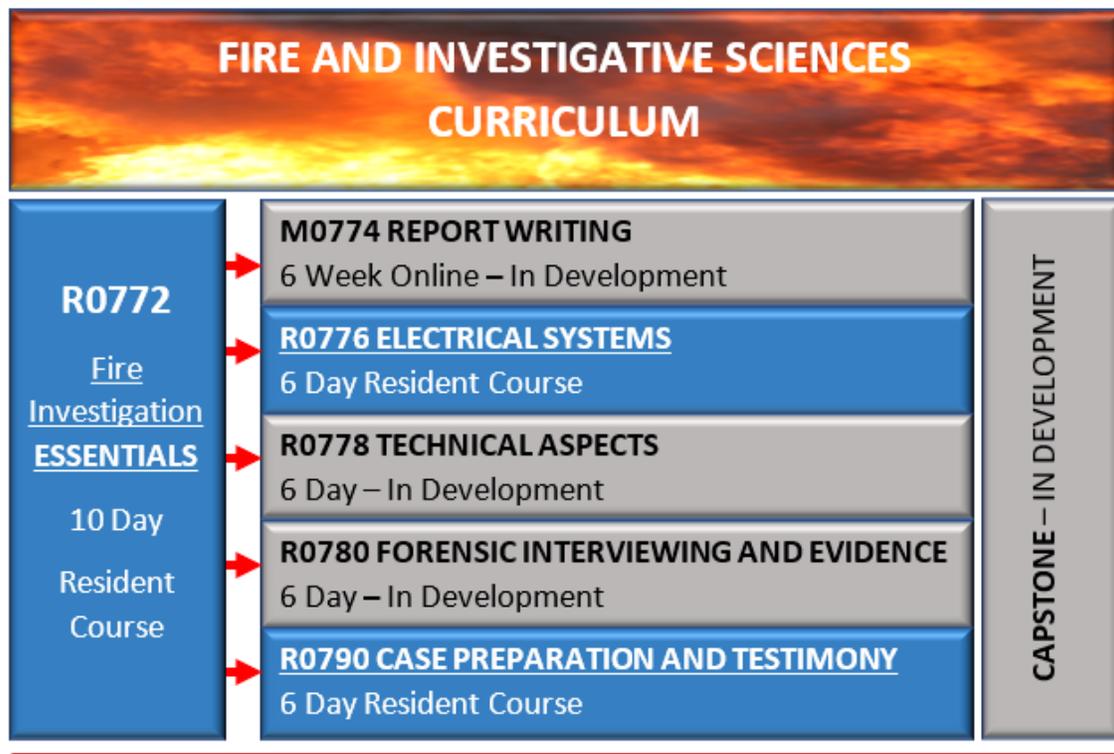
Students who do not complete the entire course will be awarded an Incomplete (I) grade. In accordance with NFA academic policies, an Incomplete (I) grade must be removed by the end of the next semester following the course, or it automatically becomes a Failing (F) grade.

If you fail an on-campus course, you will not be issued a stipend for that course. You can reapply for the failed course or any other NFA course and go through the random selection process. You don't have to successfully complete the failed course before attending another NFA course.

## Fire and Investigative Sciences Curriculum

The National Fire Academy (NFA) hosted a comprehensive curriculum review of the Fire and Investigative Sciences Curriculum with renown, 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 Science 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) NEW**

This 10-day course is the foundation of the Fire and Investigative Sciences Curriculum. The course utilizes National Fire Protection Association (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 International Association of Arson Investigators Fire Investigation Technician (FIT) certification.

**Fire Investigation: Report Writing (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 National Fire Protection Association (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.

**Fire Investigation: Electrical Systems (R0776) NEW**

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 to 50 pounds).

R0776 expands upon concepts presented in R0772 - Fire Investigation: Essentials.

**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 to 50 pounds). The instruction uses current techniques, procedures, protocols, and standards to aid the fire investigator.

R0778 expands upon concepts presented in R0772 - Fire Investigation: Essentials.

**Fire Investigation: Forensic Interviewing and Evidence (R0780) IN DEVELOPMENT**

This six-day, specialized course will address critical skills essential to fire investigation to include interviewing strategies, 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

International Association of Arson Investigators Evidence Collection Technician (ECT) certification.R0780 expands upon concepts presented in R0772 - Fire Investigation: Essentials.

**Fire Investigation: Case Preparation and Testimony (R0790) NEW**

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 International Association of Arson Investigators for Expert Testimony. This course expands upon concepts presented in Fire Investigation: Essentials (R0772). Students seeking additional interviewing, evidence, and data collection instruction should consider the new course Fire Investigation: Forensic Interviewing and Evidence (R0780).

**Fire Investigation: Capstone Project (M0795) IN DEVELOPMENT**

This online, instructor-led course is the culmination of knowledge and skills acquired through the completion of the Fire Investigation curriculum (772-790 series courses). Students must demonstrate proficiency in accordance with national standards and competencies.

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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 (W/O0770)**

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.