National Fire Academy

R0206 – Fire Investigation: Essentials
Version: 1st Edition, 1st Printing, September 2016
Quarter:
ACE Credit: In the upper division baccalaureate degree category, three semester hours in fire science, criminal justice, or fire investigation.
IACET Continuing Education Units: 7.3

Length of Course: 10 Days (67.5 contact hours, Monday – Friday)
Prerequisite: Yes
Curriculum: Fire/Arson and Explosion Investigation
Training Specialist: Lester Rich
Instructor:
Instructor email/phone:
Classroom: J-
Meeting Time: 8 AM – 5 PM

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Course Description (Catalog)

This 10-day course, is based on National Fire Protection Association (NFPA) 921, Guide for Fire and Explosion Investigations and NFPA 1033, Standard for Professional Qualifications for Fire Investigator. The course addresses the technical and scientific knowledge and skills needed to conduct successful fire/arson investigations. Using a combination of classroom, student activities, demonstrations and group projects, successful methods are demonstrated for conducting science-based fire investigations that culminate, when appropriate, in prosecution for the crime of arson. Upon completion of the course, the students will be equipped to identify the origin and cause of a fire, conduct a technically and legally sound investigation, and pursue the case through the judicial system.

Subjects covered include: health and safety, the scientific method, fire dynamics, myths and legends, electrical fire investigations, origin and cause, evidence collection and preservation, documentation of the scene, report writing, injury and fatal fire investigation, vehicle fires, legal considerations and interviewing. The course is designed to meet or exceed the majority of *Standards for Professional Qualifications for Fire Investigator* outlined in NFPA 1033, Section 1.3.7.

Student Qualifications (Primary and Secondary Audience)

The target audiences for the "Fire Investigation: Essentials" (FI:E) course (R0206) are aspiring or current fire investigators. Priority is given to full-time personnel with current fire investigation responsibility and/or full-time code enforcement responsibility.

Course Scope (Goal)

This course will provide the critical skills, background and fundamental scientific principles associated with fire investigations that will support legal proceedings in a court of law for those jurisdictions with responsibility for fire/arson investigations.

The course is designed to provide the requisite knowledge and skills critical to: developing an understanding of the scientific principles of fire dynamics; ensuring a systematic approach to professional scene investigation and documentation; and conducting a systematic origin-and-cause investigation.

Course Objectives (Course Learning Outcomes – Terminal Objectives)

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

- Define and apply the scientific method in a fire investigation.
- Identify and evaluate hazards and safety precautions as they apply to fire investigation.
- Categorize various types of building construction and fire protection systems and explain their relevance to fire investigation.
- Construct the progression of fire within a compartment employing the variables that impact fire growth, development and spread.
- Evaluate and analyze a fire scene using fire patterns to assist in determining the origin and cause of the fire.
- Reconstruct the origin and cause of the fire using the scientific method.
- Identify and describe the components of electrical service, circuitry, modes of failure and arc mapping.
- Distinguish between "old wives' tales" and modern scientific truths used in fire investigations.
- Characterize and communicate proper evidence collection procedures.
- Demonstrate and validate the process of documenting a fire scene and fire investigation with the use of notes, sketching, diagrams, video, photography and report writing.

- Integrate the best practices for the investigation of an injury or fire fatality into agency processes.
- Explain explosion dynamics as related to a post explosion or fire investigation.
- Conduct, document and communicate the findings of a fire loss investigation.
- Evaluate the circumstances surrounding a vehicle fire to determine the origin and cause.
- Identify the various motives frequently associated with the act of incendiarism and develop a strategy to effectively interview and interrogate potential witnesses/suspects.
- Anticipate and apply legal theory and applicable laws related to fire scene investigation and testimony.
- Describe the basic operation of the Bomb Arson Tracking System (BATS) and its application and use in maintaining fire/arson investigation case information.

Course Delivery Method

The National Fire Academy (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 10-day, on campus, instructor-led delivery.

This course is a blended course environment; therefore, participation will include interactive classroom activities as well as participation utilizing the NFA online learning system D2L. Laptop or tablet, capable of Wi-Fi access, with an internet browser is required. Students will take exams on the devices, complete homework assignments, participate in discussion forums and receive communications via the D2L learning system.

Students will not be allowed to participate in class without their own laptop or tablet.

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. Daily Contact Time: 7 hrs. 30 min.

TIME	DAY 1 (Mon)	TIME	DAY 2 (Tue)
8:00 – 9:15	Introduction, Welcome and Administrative (1:15) First Responder's Role Video, Welcome to NFA & Wifi Videos are Pre-Course Assignments	8:00 – 10:00	Unit 4: Fire Dynamics Overview (2:00) Instructor: ATF-FPE
9:15-9:30	Break	10:00-10:15	Break
9:30 – 10:30	Unit 1: National Fire Protection Association (NFPA) Summary of 921, 1033 and Scientific Method (1:00) Instructor: ATF/TS/NFA	10:15 – 11:00	Unit 4: Fire Dynamics Overview (:45) Instructor: ATF-FPE
10:30-11:30	Unit 1: NFPA and the Scientific Method continued (1:00) Instructor: ATF/TS/NFA	11:00 – 11:30	Unit 4: Fire Dynamics Overview (:30) Activity 4.1- Candle Experiment Instructor: ATF-FPE, NFA
11:30 – 12:30	Lunch	11:30 – 12:30	Lunch
12:30 – 2:30	Unit 1: NFPA and the Scientific Method continued (2:00) Student Activity 1.1-Voir Dire Role Play, 20/20 Video or Substitute Student Activity 1.2-Hypothesis Testing Activity	12:30 – 2:00	Unit 4: Fire Dynamics Overview (1:30) Instructor: ATF-FPE
2:30-2:45	Break	2:00 – 2:15	Break
2:45-3:30	UNIT 2: Health and Safety Review (:45)Student Activity 2.1 – Reading & Quiz	2:15 – 3:30	Unit 4: Fire Dynamics Overview (1:15) Instructor: ATF-FPE
3:30 – 4:15	UNIT 3: Building Construction Review (:45) Student Activity 3.1 – Reading & Quiz Instructor: ATF/TS/NFA	3:30 – 5:00	Unit 4: Fire Dynamics Student Activity 4.2 -Ventilation Table Top Model, Flashover Cell and Ventilation Cell Demonstrations (1:30) Assign Homework: D2L, Activity 5.1 Instructors: ATF/TS/NFA
4:15 – 5:00	Student allocated reading time, Quiz or homework prep, wrap up and student questions (:45)		

TIME	DAY 3 (W)	TIME	DAY 4 (Th)
8:00 – 10:00	Unit 5: Fire Patterns (2:00) Student Activity 5.1- Fire Pattern Identification Instructor: ATF-CFI	8:00 – 10:00	Unit 7: Electrical Fires and Building Electrical Systems (2:00) Instructor: ATF-TS
10:00 – 10:15	Break	10:00 – 10:15	Break
10:15 – 11:30	Unit 6: Fire Investigation: Origin and Causation (1:15) Instructor: ATF-CFI/TS/NFA	10:15 – 11:30	Unit 7: Electrical Fires and Building Electrical Systems (1:15) Instructor: ATF-TS
11:30 – 12:30	Lunch	11:30 - 12:30	Lunch
12:30 - 2:00	Student Activity 6.1 - Fire Scene Examination Demonstration (1:30) Instructor: ATF/TS/NFA/ATF-CFI	12:30 – 2:00	Unit 7: Electrical Fires and Building Electrical Systems (1:30) Instructor: ATF-TS
2:00 – 2:15	Break	2:00 – 2:15	Break
2:15 – 3:30	Unit 6: Fire Investigation: Origin and Causation (1:15) Instructor: ATF/TS/NFA/ATF-CFI	2:15 – 3:30	Unit 7: Electrical Fires and Building Electrical Systems (1:15) Instructor: ATF-TS
3:30 – 5:00	Unit 6: Fire Investigation: Origin and Causation (1:30) Instructor: ATF/TS/NFA/ATF-CFI	3:30 – 5:00	Student Activity 7.1 - Electrical Demonstration (1:30) Instructor: ATF-TS

TIME	DAY 5 (F)	TIME	DAY 6 (M)
8:00 – 9:00	Unit 8: Myths and Legends of Fire Investigation (1:00) Instructor: ATF/NFA	8:00 – 10:00	Unit 11: Fatal Fires (2:00) Instructor: ATF/NFA
9:00 – 10:00	Unit 9: Evidence Collection (1:00) Instructor: NFA	10:00-10:15	Break
10:00 – 10:15	Break	10:15 – 11:30	UNIT 12: Explosion Dynamics (1:15)
10:15 – 11:30	Unit 9: Evidence Collection (1:15) Instructor: NFA		
11:30 -12:30	Lunch	11:30 – 12:30	Lunch
12:30 – 1:30	Unit 10: Documentation and Report Writing (1:00) Instructor: NFA	12:30 – 1:30	Unit 13: Fire Scene Examination-Overview Student Activity 13.1 - Fire Scene Examination, #1 (1:00) Instructor: ATF/NFA
1:30 - 1:45	Break	1:30 – 1:45	Break Time Approximate, Breaks are held at Burn Range as needed.
1:45 -3:30	Unit 10: Documentation and Report Writing (1:45) Instructor: NFA	1:45 – 3:00	Unit 13: Student Activity 13.1-Fire Scene Examination, #1 (1:15) Instructor: ATF/NFA
3:30 – 5:00	Midterm Exam NFA (Students may depart after completing exam) (1:30)	3:00 - 5:00	Unit 13: Student Activity 13.1 - Fire Scene Examination, #1 (2:00) Instructor: ATF/NFA

TIME	DAY 7 (T)	TIME	DAY 8 (W)
8:00 – 9:00	Small Group Activity: 13.1 (1:00)	8:00 - 10:00	Unit 15: Motives and Interviews (2:00) Instructor: NFA
9:00 – 9:15	Break	10:00 – 10:15	Break
9:15 – 11:30	Unit 14: Vehicle Fires (2:15) Instructor: NFA/ATF	10:15 – 11:30	Unit 16: Legal Considerations (1:15) Instructor: NFA Legal Instructor
11:30 - 12:30	Lunch	11:30 – 12:30	Lunch
12:30 – 2:30	Meet in Classroom for Instructions Student Activity: 14.1 - Vehicle Fire Practical (1:00) Student Activity 13.2 - Table Top Demonstrations (1:00) Instructor: ATF/NFA	12:30 - 2:15	Unit 16: Legal Considerations (1:45) Instructor: NFA Legal Instructor
2:30 – 2:45	Break at the Burn Range	2:15 - 2:30	Break
2:45 – 5:00	Student Activity: 13.3 - Fire Scene Examination #2 (2:15) Instructor: ATF/NFA	2:30 – 5:00	Unit 16: Legal Considerations (2:30) Instructor: NFA Legal Instructor

TIME	DAY 9 (Th)
8:00 – 9:00	Final Exam (1:00) Instructor: ATF/NFA
9:00 – 9:15	Break
9:15 – 10:15	Unit 17 : Bomb Arson Tracking System Overview and Student Login (1:00)
10:15 – 11:30	Student Activity 13.3 - Group Presentations of Burn Cell Findings, Alternate Theories and Finding Challenges (1:15) Breaks are taken between presentations as needed.
11:30 -12:30	Lunch
12:30 – 2:30	Student Activity 13.3 - Group Presentations of Burn Cell Findings, Alternate Theories and Finding Challenges
2:30 – 2:45	Break
2:45 – 4:00	Student Activity 13.3 Cont. (3:30)
4:00 –	Complete Unfinished Evaluations, Make-up Exams (:30)

DAY 10 Mandatory Graduation Ceremony

Grading Methodology (Evaluation Procedures)

A minimum, total score of 70 is required for successful completion of this course. Students who complete the course with a total score of 80% or better may apply the course towards certification as Fire Investigation Technician (IAAI-FIT®). The total course score is derived from the midterm, final exam, written assignment, and final presentation:

Evaluation Method	Percent of Final Grade
Midterm Exam	30%
Final Exam	30%
Written Assignment	10%
Final Presentation	30%

Course Grading

Numerical Score	Letter Grade
100-90	A
89-80	B
79-70	C
69 or below	F

Exams

Exams contain one question per enabling objective. A test bank of 4 exam questions for each enabling objective will randomly distribute test questions for each student to ensure integrity.

Midterm Numerical Score	Final Numerical Score	Letter Grade
35-38	32-35	A
31-34	28-31	B
27-30	25-27	C
26 or below	24 or below	F

Assignments/Activities

Assignments are a combination of written exercises and group activities. The purpose of these activities is for students to demonstrate their overall understanding of the course content. Students apply key concepts and conduct scientifically valid origin-and-cause investigations. The instructors will read, comment and provide feedback on students' work at regular intervals throughout the course.

Each assignment/activity is evaluated by an instructor. When evaluating course assignments/ activities, instructors will consider the following:

- Did the student comprehensively answer the assigned questions?
- Did the student demonstrate full comprehension of the objectives to satisfy the activity's purpose?
- As a professional, is the student writing and presenting at a collegiate level, analyzing, reflecting on, and evaluating subject matter using appropriate grammar, punctuation and spelling?

Written Assignment Grading Rubric

Criteria	Ratings		
	25 points	**15 points**	**5 points**
Specialized Knowledge	Evidenced understanding and critical thinking: • Correctly used terminology and concepts from course methodology and research. • Applied scientific methodology to determine the area of origin. • Identified heat source and first fuel ignited. • Displayed thinking on one of the highest levels: critical, evaluative, integrative, scientific, etc. • Presented an alternate theory.	Marginal comprehension: • Did not show full understanding or thinking beyond a basic level of subject matter. • Failed to use correct terminology or concepts thorough out the entire assignment. • Made some, but not all possible, investigative conclusions. • Did not present an alternate theory.	Limited comprehension: • No investigative conclusions. • Demonstrated very little or no comprehension of subject matter. • Failed to apply scientific methodology.
Quality of Writing	Effective writing/ communication skills: • Focus is clear and well established throughout the assignment. • A logical progression of ideas was presented. • No errors (or a single minor error) in punctuation, grammar, and spelling. • Demonstrated professional communication and writing skills that could be applied in an official report.	Marginal writing/ communication skills: • Focus is somewhat clear and connects to the scene examination. • Lacks clear analysis or support. • Major or multiple errors in punctuation, grammar, and spelling.	Limited writing/ communication skills: • Lacks clear focus. • Missing support and analysis. • Multiple, major punctuation, grammar, and spelling errors. • Writing lacked professional tone.

Written Assignment Score	Grade
46-50	A
41-44	B
36-39	C
0-35	F

Final Presentation Grading Rubric

Content Area	Unsatisfactory 0	Satisfactory 1	Good 2
Witness Information	Argumentative with interviewee, inaccurately portrays statements made by witness. Missing any "satisfactory criteria".	Gather and present useful and accurate information that establishes the existence of previously unknown facts.	Meets all satisfactory criteria AND obtained significant and relevant additional information OR confession OR provides list of investigative leads (next steps)
Photography	Photos are unrecognizable, such as: out of focus, under/over exposed, etc. Loss of any photos.	Scene is accurately depicted and the photographs support scene findings, according to NFPA 1033, Section 4.3.2. Must include photographs that capture the exterior/interior, area/point of origin, and evidence.	Meets all satisfactory criteria AND balanced light and shadows in difficult scene conditions to achieve ideal exposure OR uses macro photography
Finished Diagram	Missing any "satisfactory criteria".	Drawn in Plan View, showing cardinal compass directions, and "not to scale" notation (unless drawing is to scale), an accurate graphic representation of scene.	Meets all satisfactory criteria AND includes an exploded view, OR overlays, OR animations that retain an accurate graphic representation.
Evidence	Missing any "satisfactory criteria". Any evidence mishandling such as: overfilling evidence can, failing to properly seal and initial can, failure to maintain chain of custody, etc.	Identify all evidence AND collect, properly package and label one sample for shipment to laboratory. Produce evidence log listing all items identified.	Meets all satisfactory criteria AND recognizes trace evidence, or locates/preserves initially missed evidence.
Origin & Cause of Fire	Unable to demonstrate application of the scientific method and a systematic approach to conduct a fire scene examination.	Follows scientific method and uses a systematic approach to successfully identify the area of origin. Identify the competent ignition source(s) and the circumstance(s) that brought the fuel and ignition source together. If multiple ignition sources exist, explain.	Meets all satisfactory criteria AND discuss alternate theories OR report on tests, experiments or research conducted AND discusses data from tests, experiments or research in presentation.
Classification	Fails to classify the fire.	Accurately classify fire as: accidental, incendiary, undetermined or natural. Based on the information collected during the exercise.	Meets all satisfactory criteria AND accurately discusses how intent or other information supports the classification.

Presentation Total Points	Letter Grade	Points toward Final Grade
Minimum of 10 points and no columns with a score of 0	A	100
Minimum of 8 points and no columns with a score of 0	B	89
Minimum of 6 points and no columns with a score of 0	C	79
Less than 6	F	0

Students who do not complete the entire course will be awarded an Incomplete (I) grade. In accordance with National Fire Academy 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.

Required Reading Assignments

Student completion of reading assignments will be evidenced by their class participation and will not be a separately graded activity.

Course Overview

Terminal Objective (Unit 1)		Evaluated by
Define and apply the scientific method to a fire investigation.		Exam/ Final Presentation/ Activities 1.1 and 1.2
Enabling Objectives	**Course Component**	**Evaluated by**
Define the terms "guide" and "standard."	Lecture	Exam
Explain the term "standard of care" as it relates to fire investigation.	Lecture	Exam
List the 16 topics outlined in National Fire Protection Association (NFPA) 1033, *Standard for Professional Qualifications for Fire Investigator*, that investigators must know.	Lecture	Exam
Discuss the purpose and uses of NFPA 921, *Guide for Fire and Explosion Investigations*.	Lecture/ Activities 1.1 and 1.2	Exam/ Activities 1.1 and 1.2
Develop an understanding of the importance and necessity of the curriculum vitae (CV).	Lecture/ Activities 1.1 and 1.2	Exam/ Activities 1.1 and 1.2
Describe the appropriate use of the process of elimination.	Lecture/ Activities 1.1 and 1.2	Exam/ Activities 1.1 and 1.2
Define the scientific method.	Lecture/ Activity 1.2	Exam/ Activity 1.2
Name the seven steps in the scientific method.	Lecture/ Activity 1.2	Exam/ Activity 1.2
Apply the scientific method to a fire investigation.	Lecture	Exam

Terminal Objective (Unit 2)		Evaluated by
Identify and evaluate hazards and safety precautions as they apply to fire investigation.		Exam/ Final Presentation
Enabling Objectives	**Course Component**	**Evaluated by**
Identify and describe primary safety and health hazards.	Reading/ Self-Study	Exam
Explain hazard and risk assessment factors during fire investigations.	Lecture	Exam
Identify the relevant National Fire Protection Association (NFPA) standards and Occupational Safety and Health Administration (OSHA) regulations as they apply to fire investigations.	Lecture	Exam
Model training in the use of the R/N95 disposable respirator.	Demonstration	Completion of OSHA Form

Terminal Objective (Unit 3)		Evaluated by
Categorize various types of building construction and fire protection systems and explain their relevance to fire investigation.		Exam/Quiz
Enabling Objectives	**Course Component**	**Evaluated by**
Identify common building construction types.	Lecture	Exam
Assess and describe the investigative considerations associated with each type of building construction.	Lecture	Exam
Appraise common methods used to defeat a fire protection system's functionality.	Reading	Exam/Quiz
Conclude how building materials impact fire spread.	Lecture	Exam
Compare and contrast the three types of structural loads: dead, live and impact.	Lecture	Exam

Terminal Objective (Unit 4)		Evaluated by
Construct the progression of fire within a compartment employing the variables that impact fire growth, development and spread.		Exam/ Activity 4.1/ Final Presentation
Enabling Objectives	**Course Component**	**Evaluated by**
Define and explain basic fire chemistry concepts.	Lecture/ Activity 4.1	Exam/ Activity 4.1
Define, explain and apply the behavior of fire to an investigation.	Lecture/ Activity 4.1	Exam/ Activity 4.1
Analyze fire dynamics within the context of a fire investigation.	Lecture	Exam
Define and explain three methods of heat transfer.	Lecture/ Activity 4.1	Exam/ Activity 4.1

Terminal Objective (Unit 5)		Evaluated by
Evaluate and analyze a fire scene using fire patterns to assist in determining the origin and cause of the fire.		Exam/ Activity 5.1/ Final Presentation
Enabling Objectives	**Course Component**	**Evaluated by**
Interpret fire patterns, demonstrating an understanding of the burning characteristics of the fuel package.	Lecture/ Activity 5.1	Exam/ Activity 5.1
Within the fire scene, evaluate burn patterns in the context of fuel packages, ventilation and fire dynamics that led to the formation of the pattern.	Lecture/ Activity 5.1	Exam/ Activity 5.1

Terminal Objective (Unit 6)		Evaluated by
Reconstruct the origin and cause of the fire using the scientific method.		Exam/ Final Presentation
Enabling Objectives	**Course Component**	**Evaluated by**
Assess a structure from the exterior to interior in a systematic manner to identify indicators that may help determine the area of fire origin and cause.	Lecture/ Activity 6.1	Exam
Interpret the significance of various fire patterns, fuel packages and fire spread issues.	Lecture/ Activity 6.1	Exam
Support the selection of indicators an investigator may use to determine the origin of a fire.	Lecture/ Activity 6.1	Exam
List and differentiate the four types of information that can assist in determining the origin of a fire as outlined in the National Fire Protection Association (NFPA) 921, *Guide for Fire and Explosion Investigations.*	Lecture	Exam
Evaluate and explain the process of fire cause determination.	Lecture/ Activity 6.1	Exam
Describe how spoliation (legal) and anticipate how contamination (physical) can affect potential evidence in a fire investigation.	Lecture	Exam
List common accidental and incendiary fire causes.	Lecture	Exam

Terminal Objective (Unit 7)		Evaluated by
Identify and describe the components of electrical service, circuitry, modes of failure and arc mapping.		Exam/ Final Presentation
Enabling Objectives	**Course Component**	**Evaluated by**
Define basic electrical terms.	Lecture	Exam
Recognize the components of a building's electrical system from generation to distribution.	Lecture	Exam
Model basic safety practices when evaluating an electrical system.	Lecture	Exam
Evaluate electrical circuits using Ohm's law/Joule's law.	Lecture	Exam
Differentiate between electrical and thermal damage on energized and nonenergized conductors.	Lecture/ Activity 7.1	Exam
Evaluate common modes of electrical failure to systems, components and appliances.	Lecture	Exam
Identify resources available to assist in evaluation of an electrical system or components.	Lecture/ Activity 7.1	Exam

Terminal Objective (Unit 8)		Evaluated by
Distinguish between "old wives' tales" and modern, scientific truths used in fire investigations.		Exam
Enabling Objectives	**Course Component**	**Evaluated by**
Identify common "myths and legends" that are erroneously used in determination of the origin and cause of a fire.	Lecture	Exam
Describe the proper interpretation of these fire scene indicators based on current scientific research.	Lecture	Exam

Terminal Objective (Unit 9)		Evaluated by
Characterize and communicate proper evidence collection procedures.		Exam/ Final Presentation
Enabling Objectives	**Course Component**	**Evaluated by**
Define terminology relevant to evidence collection and preservation.	Lecture	Exam
Explain and demonstrate proper collection and packaging techniques.	Lecture	Exam
List the most common sources of evidence contamination and how to avoid them.	Lecture	Exam
Describe proper standard operating procedures (SOPs) for maintaining chain of custody.	Lecture	Exam

Terminal Objective (Unit 10)		Evaluated by
Demonstrate and validate the process of documenting a fire scene and fire investigation with the use of notes, sketching, diagrams, video, photography and report writing.		Exam/ Written Assignment/ Final Presentation
Enabling Objectives	**Course Component**	**Evaluated by**
Follow a systematic approach in documenting a fire investigation.	Lecture	Exam
Identify proper procedures for documenting and recording fire scene data.	Lecture	Exam/ Written Assignment/ Final Presentation
Explain the key information that should be included in an origin and causation report.	Lecture	Exam
Demonstrate use of the scientific method within an origin and causation report.	Lecture	Exam

Terminal Objective (Unit 11)		Evaluated by
Integrate the best practices for the investigation of an injury or fire fatality into agency processes.		Exam
Enabling Objectives	**Course Component**	**Evaluated by**
Identify the relationship between an origin and cause investigation and an injury or death investigation.	Lecture	Exam
Identify the specific roles of the coroner, medical examiner, law enforcement, fire investigator and other involved agencies.	Lecture	Exam
Explain the importance of the fire victim's location, condition, physiology, toxicology and position.	Lecture	Exam
Identify the protocol for a line-of-duty death (LODD).	Lecture	Exam

Terminal Objective (Unit 12)		Evaluated by
Explain explosion dynamics as related to a post-explosion or fire investigation.		Exam
Enabling Objectives	**Course Component**	**Evaluated by**
Recognize and define detonation and deflagration.	Lecture	Exam
Analyze post blast physical evidence and characterize the explosion as low order or high order.	Lecture	Exam
Define the acronym BLEVE.	Lecture	Exam
Analyze the effects of a positive and negative blast pressure wave.	Lecture	Exam
Choose and apply the correct method for identifying gas-system related components and evidence.	Lecture	Exam

Terminal Objective (Unit 13)		Evaluated by
Conduct, then document and communicate the findings of a fire loss investigation.		Final Presentation/ Written Assignment
Enabling Objectives	**Course Component**	**Evaluated by**
Conduct a safe and systematic scene investigation to determine the point of origin and fire cause.	Lecture/ Activities 13.1 and 13.2	Final Presentation/ Activities 13.1 and 13.2
Identify pertinent physical evidence and the appropriate laboratory testing to be requested.	Lecture/ Activities 13.1 and 13.2	Final Presentation/ Activities 13.1 and 13.2
Prepare and present all appropriate reports to document the complete investigation.	Lecture/ Activities 13.1 and 13.2	Presentation/ Written Assignment
Develop questions and alternate theories for second fire scene inspection.	Lecture/ Activities 13.1, 13.2, and 13.3	Presentation/ Written Assignment

Terminal Objective (Unit 14)		Evaluated by
Evaluate the circumstances surrounding a vehicle fire to determine the origin and cause.		Exam
Enabling Objectives	**Course Component**	**Evaluated by**
Identify basic vehicle components, including mechanical and electrical systems.	Lecture/ Activity 14.1	Exam
Recognize and document potential ignition sources and identify materials capable of supporting combustion.	Lecture/ Activity 14.1	Exam
List the most common motives associated with incendiary vehicle fires.	Lecture	Exam
Identify safety considerations when investigating a vehicle fire.	Lecture	Exam
Explain the basic construction and safety features of a hybrid vehicle.	Lecture	Exam

Terminal Objective Unit (15)		Evaluated by
Understand the various motives frequently associated with the act of incendiarism, and develop a strategy to effectively interview and interrogate potential witnesses/suspects.		Exam
Enabling Objectives	**Course Component**	**Evaluated by**
Describe common arson motives.	Lecture	Exam
Identify the relationships that may exist between certain motives and certain types of fires.	Lecture	Exam
List the steps, in order, of the **I**ntroduction, **R**apport building, **O**pening statement, **N**arrative, **I**nquiry and **C**onclusion (IRONIC) interviewing method.	Lecture	Exam
Identify the appropriate steps for preparing and conducting an effective interview.	Lecture	Exam

Terminal Objective (Unit 16)		Evaluated by
Anticipate and apply legal theory and applicable laws related to fire scene investigation and testimony.		Exam/ Final Presentation
Enabling Objectives	**Course Component**	**Evaluated by**
Recognize the elements of arson.	Lecture	Exam
Apply search-and-seizure laws.	Lecture	Exam
Describe four methods for lawful access at a fire scene.	Lecture	Exam
Apply the law of confessions.	Lecture	Exam
Discuss preparation pointers for polishing lay and expert testimony.	Lecture	Exam
Prepare for providing testimony in legal proceedings.	Lecture	Exam

Terminal Objective (Unit 17)		Evaluated by
Describe the basic operation of the Bomb Arson Tracking System (BATS) and its application and use in maintaining fire/arson investigation case information.		N/A
Enabling Objectives	**Course Component**	**Evaluated by**
Explain the basic functionality of BATS as a case management system.	Lecture/ Demonstration	N/A
List the advantages of using an automated case management system for fire and explosion investigations.	Lecture/ Demonstration	N/A

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.

Writing and Presentation Expectations

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

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.

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. Please refer to the National Emergency Training Center Welcome package for additional information.
https://training.fema.gov/emiweb/downloads/netc_welcome_package.pdf?v20151217