



FEMA



National Fire Academy

R0220 – Fire Inspection Principles

Version: 1st Edition, 11th Printing, November 2013

Quarter:

ACE Credit: In the lower division baccalaureate/associate degree category, three semester hours in fire science or fire technology.

IACET Continuing Education Units: 6.5

Length of Course: 10 Days (68 contact hours, Monday – Friday)

Prerequisite: Yes

**Curriculum: Fire Prevention: Technical
Training Specialist: Woody Stratton**

Instructor:

Instructor email/phone:

Classroom: J-

Meeting Time: 8 AM – 5 PM

Table of Contents

Course Description	Course Resources
Primary and Secondary Audience	Evaluation Procedures
Course Scope	Course Outline
Course Objectives	Policies
Course Delivery Method	

Course Description (Catalog)

R0220 – “Fire Inspection Principles.” This 10-day course is designed to provide the student with the fundamental knowledge, skills and abilities to conduct both basic- and intermediate-level fire safety inspections. Students will be introduced to various codes and standards in order to develop a working knowledge of their application in the inspection process. Each student should be familiar with the codes and standards in effect in his or her jurisdiction.

Topics addressed in this course include the fire inspector’s responsibilities and role in code enforcement; the relationship of fire and codes; general fire prevention practices; inspection competencies; life safety considerations and enforcement; fire safety principles and requirements related to hazardous materials; special hazards of electrical, heating, and cooking equipment and systems; and fire protection systems and equipment.

Student Qualifications (Primary and Secondary Audience)

The fire prevention or code enforcement officer with limited fire inspection experience. Suppression company officers who have responsibility for fire prevention inspections. Related professionals whose responsibility requires a basic knowledge of the fire prevention and code enforcement process.

Course Scope (Goal)

The course goal is:

To provide the students with the fundamental knowledge, skills, and attitudes to conduct basic fire safety inspections effectively and confidently. This course is appropriate for the fire prevention or code enforcement official, and other allied professionals with limited fire inspection and code enforcement experience, who have the responsibility for conducting fire safety inspections. Students will be introduced to various codes and standards in order to develop a working knowledge of their application in the inspection process.

Course Objectives (Course Learning Outcomes – TLOs)

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

- Explain the code enforcement system and the fire inspector's role in that system.
- Handle situations that are typical of the fire inspector's role in a professional manner.
- Given specific building materials, recognize the potential hazards of fire spread.
- Given simulated situations, identify construction types and building systems; analyze the strengths and concerns related to fire, smoke, and heat travel.
- Given a scenario, identify the key characteristics of each occupancy class.
- Describe categories of human behavior in fire situations and analyze what variables affect this behavior.
- Explain the development, application, and interrelationship of codes and standards.
- Evaluate the general fire safety of a structure by researching the concepts within their code.
- Using their codes, verify that an acceptable level of life safety is provided for the occupants of a structure.
- Recognize the presence of hazardous materials or processes.
- Recognize hazards associated with electrical, heating, and cooking systems and equipment.
- Identify methods of mitigating the recognized hazards.
- Educate others about hazards associated with electrical, heating, and cooking systems.
- Be able to verify that commonly used fire protection systems and equipment are operational.
- Be able to review and interpret fire protection system inspection and test reports to identify operational deficiencies.
- Be able to describe common fire suppression agents and explain where they are used.

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 classroom course is designed for the national level fire service officer from State and local fire service organizations. During this 10-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 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.

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AM	Course Introduction Module 1: Code Enforcement: Your Role LRC Orientation	Module 1: Code Enforcement: Your Role (cont'd) Module 2: Fire and Codes: Their Relationship	Module 2: Fire and Codes: Their Relationship (cont'd)	Module 3: General Fire Safety (cont'd)	Module 4: Life Safety (cont'd)
PM	Module 1: Code Enforcement: Your Role (cont'd)	Module 2: Fire and Codes: Their Relationship (cont'd)	Module 3: General Fire Safety	Module 4: Life Safety	Quiz on Modules 1-3 Module 4: Life Safety (cont'd)
Evening	Read text for Module 2	Read text for Module 3	Assign topics for Group Presentations (Module 7 Activities) Read text for Module 4	Activity 3.3	Weekend Project Assignment Read text for Module 5

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AM	Module 5: Hazardous Materials and Processes	Module 5: Hazardous Materials and Processes (cont'd)	Module 6: Special Hazards (cont'd) Module 7: Fire Protection Systems and Equipment	Module 7: Fire Protection Systems and Equipment (cont'd)	Course Summary Graduation
PM	Module 5: Hazardous Materials and Processes (cont'd)	Module 6: Special Hazards	Module 7: Fire Protection Systems and Equipment (cont'd)	Quiz on Modules 5-7 Module 7: Fire Protection Systems and Equipment (cont'd)	
Evening	Read text for Module 6 Review Activity 4.6 by selected code groups	Read text for Module 7			

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)

A minimum final grade of at least 70 percent is required to pass this course.

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

Required Reading Assignments

Student completion of reading assignments will be done via evaluation of their class participation and will not be a separately graded activity.

Suggested Readings

Suggested readings are not evaluated, but may enhance the student's understanding and promote discussion of course material.

Course Outline

Introduction (Day 1)

Objectives

To provide the students with the fundamental knowledge, skills, and attitudes to effectively and confidently conduct basic fire safety inspections. It is designed for persons with less than eighteen months of fire inspection/code enforcement experience.

Module 1: Code Enforcement: Your Role (Day 1)

Objectives

Terminal Objectives

The students will:

1. Explain the code enforcement system and the fire inspector's role in that system.
2. Handle situations that are typical of the fire inspector's role in a professional manner.

Enabling Objectives

The students will:

1. Identify the benefits of a code enforcement system and the effects of the community's attitude on that system.
2. Define the essential elements of a code enforcement system.
3. Describe the legal authority and limitations relevant to fire code inspections.
4. Explain "compliance" and describe methods for achieving it.

5. Describe the critical importance of thorough documentation.
6. Demonstrate elements of effective communication necessary to achieve compliance.
7. Explain the rationale for the permit process and list permits required by their code.
8. Contrast a formal appeals process with an informal appeals process.
9. Contrast proper and improper standards of behavior for an inspector.
10. Identify interpersonal skills necessary to effect compliance.
11. Recognize ethical and unethical situations for the code enforcement officer.

Module 2: Fire and Codes: Their Relationship (Day 2)

Objectives

Terminal Objectives

The students will:

1. Given specific building materials, recognize the potential hazards of fire spread.
2. Given simulated situations, identify construction types and building systems; analyze the strengths and concerns related to fire, smoke, and heat travel.
3. Given a scenario, identify the key characteristics of each occupancy class.
4. Describe categories of human behavior in fire situations and analyze what variables affect this behavior.
5. Explain the development, application, and interrelationship of codes and standards.

Enabling Objectives

Given the content of the module, the students will:

1. Identify what is fire.
2. Describe methods of fire travel.
3. Describe the stages of fire growth and development.
4. Recognize the effects of fire on building construction materials.

5. Differentiate among the types of construction and identify the protection associated with each.
6. Explain the factors used to establish the occupancy classes.
7. Identify the occupancy classes in their codes.
8. Locate fire safety requirements in companion code documents.
9. Identify and describe the characteristics that impact occupant behavior during a fire. (Age, mobility, knowledge of the building, etc.)
10. Differentiate among “code,” “standard,” “recommended practices,” and “guides.”
11. Describe how local codes apply to new and existing structures.

Module 3: General Fire Safety (Day 3)

Objectives

Terminal Objective

The students will be able to evaluate the general fire safety of a structure by researching the concepts within their code.

Enabling Objectives

Given the content of this module, the students will be able to:

1. Identify appropriate codes, and apply them in evaluating the general fire safety of a site.
2. Identify appropriate codes, and apply them in evaluating the general fire safety of a structure.
3. Identify appropriate codes, and apply them in evaluating the general fire safety pertaining to a structure’s use.

Module 4: Life Safety (Day 4)

Objectives

Terminal Objective

Using their codes, the students will be able to verify that an acceptable level of life safety is provided for the occupants of a structure.

Enabling Objectives

The students will:

1. Determine the occupancy classification for a given structure.
2. Distinguish between “evacuation” and “defend in place.”
3. Calculate the occupant load for a given structure, using their codes.
4. List the basic components of an exit system.
5. Define exit as used in their codes.
6. Determine and rationalize the number of required exits for a given structure.
7. Evaluate the adequacy of the egress system for a given structure.
8. Determine the code requirements for interior finishes.
9. Describe the method of classifying interior finishes and identify the limitations of the classification methods.
10. Describe the impact of the fire suppression and detection systems on life safety.
11. Explain the life safety hazards associated with furnishings.
12. Identify the elements necessary for emergency preparedness and training.

Module 5: Hazardous Materials and Processes (Day 6)

Objectives

Terminal Objective

The students will be able to recognize the presence of hazardous materials or processes.

Enabling Objectives

The students will:

1. Recognize and properly categorize hazardous materials and processes.
2. Explain the general principles for controlling fire hazards associated with hazardous materials.

3. Describe fire prevention procedures for controlling hazards associated with the storing, handling, and use of hazardous materials.
4. Select the appropriate techniques and recommend a solution to a problem involving flammable liquids.

Module 6: Special Hazards (Day 7)

Objectives

Terminal Objectives

The students will:

1. Recognize hazards associated with electrical, heating, and cooking systems and equipment.
2. Identify methods of mitigating the recognized hazards.
3. Educate others about hazards associated with electrical, heating, and cooking systems.

Enabling Objectives

The students will:

1. Define electrical terminology and identify electrical equipment.
2. Identify common electrical hazards.
3. Given a list of questions, research appropriate electrical codes and determine appropriate action to mitigate electrical hazards.
4. Identify appropriate fuel storage and heating equipment installation.
5. Research appropriate heating codes and determine appropriate action to mitigate heating equipment hazards.
6. Identify common cooking equipment and fuels.
7. Given a scenario, research appropriate codes to mitigate hazards associated with cooking equipment and fuels.
8. Explain compliance and describe methods of achieving compliance.

Module 7: Fire Protection Systems and Equipment (Day 8)

Objectives

Terminal Objectives

The students will:

1. Be able to verify that commonly used fire protection systems and equipment are operational.
2. Be able to review and interpret fire protection system inspection and test reports to identify operational deficiencies.
3. Be able to describe common fire suppression agents and explain where they are used.

Enabling Objectives

Given the content of the module, the students will:

1. Determine the suitability of portable fire extinguishers and their operational readiness.
2. Describe common types of fire extinguishing agents, and explain how they suppress fires.
3. Identify the fire inspector's role in enhancing fire protection equipment reliability.
4. Identify five types of automatic sprinkler systems and describe their operation.
5. Explain how sprinkler selection may affect sprinkler system performance.
6. Identify common impairments to automatic sprinkler systems' effectiveness and recommend corrective actions.
7. Review a sprinkler system inspection and test report, and identify operational deficiencies.
8. Describe three sprinkler system tests and state the purpose of each test.
9. Utilize test documentation to verify the adequacy of the water supply for automatic sprinkler systems.
10. Identify the operational components of standpipe systems.
11. Identify the basic components of a fire alarm system.
12. Identify impairments to fire alarm system performance.

13. Create a commercial kitchen fire suppression system inspection procedure.

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 fire 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 APA, 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 APA, Sixth Edition.

Late Assignments

Students are expected to submit classroom assignments by the posted due date (11:59 p.m. EDT/EST) 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. Discussion board postings submitted within 3 days after the submission deadline will receive up to a 20% deduction. Those that do not submit their discussion board postings within this timeline will receive a “0” grade for the week. Final assignment papers will not be accepted after the deadline. Any paper submitted after the deadline will receive a “0” grade for that assignment.

Netiquette

Online learning promotes the advancement of knowledge through positive and constructive debate – both inside and outside the classroom. Forums on the Internet, however, can occasionally degenerate into needless insults and “flaming.” Such activity and the loss of good manners are not acceptable in a professional learning setting – basic academic rules of good behavior and proper “Netiquette” must persist. Remember that you are in a place for the rewards and excitement of learning which does not include descent to personal attacks or student attempts to stifle the forum of others.

- **Technology Limitations.** While you should feel free to explore the full-range of creative composition in your formal papers, keep e-mail layouts simple. The NFA Online classroom may not fully support MIME or HTML encoded messages, which means that bold face, italics, underlining, and a variety of color-coding or other visual effects will not translate in your e-mail messages.
- **Humor Note.** Despite the best of intentions, jokes and especially satire can easily get lost or taken seriously. If you feel the need for humor, you may wish to add “emoticons” to help alert your readers: ;-), :), ☺ .

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 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.

http://www.usfa.fema.gov/training/nfa/admissions/student_policies_campus_information.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.