



FEMA



National Fire Academy

**R0132 – Fire and Life Safety Plan Review
Version: 1st Edition, 4th Printing, October 2013**

Quarter:

ACE Credit: In the lower division baccalaureate/associate degree category, 2 semester hours in Fire Science, Fire Engineering, or Code Enforcement.

IACET Continuing Education Units: 2.6

Length of Course: 6 Days (25 contact hours, Sunday – Friday)

Prerequisite: Yes

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

Instructor:

Instructor email/phone:

Classroom: J-

Meeting Time: 8 AM – 5 PM

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Course Description (Catalog)

R0132 – “Fire and Life Safety Plan Review.” This course will assist the student in verifying that construction documents comply with applicable building and fire codes for fire protection and life-safety requirements.

Subjects addressed in the course include site plan reviews for emergency apparatus access, water supply, and hydrants for fire protection; review of architectural drawings for construction requirements, means of egress for life safety, and fire-resistive compartmentalization; evaluation of heating, ventilating, and air conditioning (HVAC), evaluation of exit illumination and emergency power supplies, and assessment of the need for built in fire protection systems and smoke control/management systems.

Student Qualifications (Primary and Secondary Audience)

Individuals who are, or expect to be, responsible for verifying code compliance of construction documents from a fire protection standpoint. NOTE: Local jurisdictions are encouraged to submit applications of both their fire and building plans examiners to attend a course together if both meet the selection criteria. Priority selection will be given for up to five pairs of such officials per course offering. Applications must be submitted together, be approved and signed by the head of the sponsoring organization, with a cover letter indicating that they are applying as a team. Students who have taken Plans Review for Inspectors R102 will not be admitted to this course.

Course Scope (Goal)

1. To develop an understanding of how plan review relates to the overall fire prevention efforts of a jurisdiction for the protection of life and property.
2. To develop competent plan reviewers who can apply a systematic approach to verify compliance of construction documents with applicable codes and standards.
3. To expose the student to situations that will require special expertise to resolve.

Course Objectives (Course Learning Outcomes – TLOs)

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 6-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.

DAY 1	DAY 2
Introduction Welcome	Unit 2: Site Plans: Fire Protection Features (cont'd)
<i>Break</i>	<i>Break</i>
Pretest and Review	Activity 2.2: Fire Flow Comparisons Unit 2: Site Plans: Fire Protection Features (cont'd)
<i>Break</i>	<i>Break</i>
Unit 1: Code Footprint Information	Activity 2.3: Site Plan Evaluation
<i>Lunch Break</i>	<i>Lunch Break</i>
Activity 1.1: Evaluating the Code Footprint Unit 2: Site Plans: Fire Protection Features	Unit 3: Architectural Features: Fire Protection Activity 3.1: Occupancy Separations
<i>Break</i>	<i>Break</i>
Unit 2: Site Plans: Fire Protection Features (cont'd) Activity 2.1: Fire Apparatus Access Road Unit 2: Site Plans: Fire Protection Features (cont'd)	Unit 3: Architectural Features: Fire Protection (cont'd) Activity 3.2: Area and Heights

DAY 3	DAY 4
Unit 3: Architectural Features: Fire Protection (cont'd) Activity 3.3: Fire Walls	Activity 4.1: Means of Egress
<i>Break</i>	<i>Break</i>
Activity 3.3: Fire Walls (cont'd) Unit 3: Architectural Features: Fire Protection (cont'd) Activity 3.4: Exterior Walls	Unit 4: Architectural Features: Life Safety (cont'd) Activity 4.2: Interior Finishes
<i>Break</i>	<i>Break</i>
Unit 3: Architectural Features: Fire Protection (cont'd) Activity 3.5: Fire Resistance Ratings of Building Elements	Unit 4: Architectural Features: Life Safety (cont'd) Activity 4.3: Life Safety and Fire Protection Concepts
<i>Lunch Break</i>	<i>Lunch Break</i>
Activity 3.6: Fire Resistance and Setbacks	Unit 5: Electrical Systems
<i>Break</i>	<i>Break</i>
Unit 4: Architectural Features: Life Safety	Activity 5.1: Electrical Requirements

DAY 5	DAY 6
Unit 6: Mechanical Systems	Final Exam (90 minutes)
<i>Break</i>	
Unit 6: Mechanical Systems (cont'd) Activity 6.1: Mechanical Systems	Final Exam and Review
<i>Break</i>	<i>Break</i>
Unit 7: Fire Protection System Requirements	Course Evaluation and Graduation
<i>Lunch Break</i>	
Unit 7: Fire Protection System Requirements Activity 7.1: Fire Protection Systems	
<i>Break</i>	
Course Review	

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)

Final Exam

Each student will be given an exam consisting of 33 fill-in questions. The exam will constitute 80 percent of the final grade.

Final Course Grade

- attendance = 10 percent;
- student activities = 10 percent; and
- final exam = 80 percent.

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

None.

Unit 1: Code Footprint Information (Day 1)

Objective

The students will evaluate drawings to determine if required information is provided (code footprint).

Unit 2: Site Plans: Fire Protection Features (Day 1)

Objectives

The students will be able to:

1. Evaluate civil (site) drawings to determine compliance with requirements for fire department access, waterflow requirements, and the presence of special hazards.
2. Identify building code requirements that establish fire-resistance requirements based on site separation.

Unit 3: Architectural Features: Fire Protection (Day 2)

Objectives

The students will be able to:

1. Identify and interpret building code requirements that establish the allowable area and height of buildings and structures, especially as they relate to fire protection and life safety.
2. Identify and interpret the building and fire code requirements related to the concepts of separated and nonseparated uses/hazards.
3. Explain the differences and application of listed fire-rated assemblies, calculated fire resistance, and specified assemblies.
4. Describe the differences between bearing and nonbearing structural elements and identify such on architectural and structural drawings.
5. Evaluate architectural and structural drawings to determine compliance with requirements for fire-rated assemblies.

Unit 4: Architectural Features: Life Safety (Day 3)

Objectives

The students will be able to:

1. Identify and interpret building and fire code requirements that establish occupant load.
2. Evaluate architectural drawings to determine compliance with the requirements for occupant load.

3. Identify and interpret building and fire code requirements that establish provisions for means of egress.
4. Evaluate architectural drawings to determine compliance with the requirements for means of egress.
5. Identify and interpret the building and fire code requirements that establish the provisions for vertical-opening arrangements and protection.
6. Identify and interpret the building and fire code requirements that establish requirements for interior finishes.
7. Evaluate architectural drawings to determine compliance with the requirements for interior finishes.
8. Explain the building code applications for special uses and occupancies.

Unit 5: Electrical Systems (Day 4)

Objective

The students will evaluate architectural and electrical drawings for requirements for egress illumination and emergency and standby power.

Unit 6: Mechanical Systems (Day 5)

Objective

The students will evaluate architectural, mechanical, and electrical drawings to determine compliance with requirements for fire and smoke dampers and combustion air.

Unit 7: Fire Protection System Requirements (Day 5)

Objectives

The students will be able to:

1. Evaluate architectural drawings to determine where and what type of active fire protection systems (sprinklers, standpipes, fire alarms, and other extinguishing systems) are required.
2. Evaluate architectural drawings to determine where and what type of smoke control or smoke management systems are required.

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.

Grading Rubrics

Letter Grade	Point Range	Student Performance Criteria
A	90-100	<ul style="list-style-type: none"> • Demonstrates ability to interpret, integrate, and apply learning outcomes beyond the context of the course through application of critical and creative thinking skills. • Completes work assignments that consistently exceed requirements and that interprets and applies objectives in new, unique, or creative ways.
B	80-89	<ul style="list-style-type: none"> • Completes work assignments that consistently meet most requirements. • Contributes regularly to class participation activities.
C	70-79	<ul style="list-style-type: none"> • Demonstrates a satisfactory level of competence in learning outcomes for the course. • Completes work assignments that satisfy minimum requirements for the course. • Satisfies minimum requirements for class participation activities.
D	60-69	<ul style="list-style-type: none"> • Completes work assignments that usually meet minimum requirements. • Contributes inconsistently or infrequently to class participation activities.
F	59 and below	<ul style="list-style-type: none"> • Cannot demonstrate competence in many fundamental outcomes for the course. • Submits work assignments that frequently do not meet minimum requirements, or do not complete the assigned work. • Does not satisfy minimum requirements for attendance or contribution to class activities.
I	—	<ul style="list-style-type: none"> • Satisfactorily completed most of the required work for the course, but due to medical reasons or other extenuating circumstances, is unable to complete the work by the end of the next semester. • Fails to request a deadline extension from the Training Specialist.