



DEPARTMENT OF FINANCIAL SERVICES

Division of State Fire Marshal
Bureau of Fire Standards and Training

Title: Syllabus for Construction Documents and Plans Review

Revision: August 2019

Section I - Course Information

Course Title: Construction Documents and Plans Review

Course Number(s): BFST/FFP1/ATPC2521

Class Days/Time: If being taught at the Florida State Fire College Campus 11655 NW Gainesville Road, Ocala, FL 34482 Bldg. C – Classrooms – Monday - Friday 8 a.m.- 5 p.m. Additional coursework outside the classroom totaling five (5) hours of work may be assigned.

Section II - Points of Contact

Training Supervisor:

Name: Frank Ennist
Email: Frank.Ennist@myfloridacfo.com
Work Phone: 352-369-2838
Bldg. C Room 158

Program Manager:

Name:
Email:
Work Phone:
Bldg. C Room 141

Section III – Course Description

This curriculum is geared towards teaching the student how to assimilate information contained in working, drawing, and specifications as they relate to the fire inspector. The curriculum includes how to interpret conventional graphic communications. Accepted standards and conventions are introduced. Symbols, abbreviations, principles of technical projection, as well as a review of geometry are included. Related worksheets are used to allow for applied experience of finding and interpreting information from authentic drawings.

Section IV - Course Materials, Grading, and Attendance

Recommended Book: *Plans Examiner for Fire and Emergency Services, 2nd Edition (2016)* Fire Protection Publications (IFSTA) ISBN: 978-087939608-4

Prerequisite(s): None

Contact Hours: This class has 45 contact hours.

Continuing Educations Units (CEU's): 45 hours towards Fire Codes Administrator, Fire Safety Inspector 1, Instructor I, II, III

Pre-Course Assignment: None

Required Materials: Paper, pens, USB portable storage device (thumb drive), architectural ruler

Grading: Students must achieve a minimum cumulative score of 70% to pass this course. Course grades are determined from assignments and activities including, homework, projects, quizzes, exams, and presentations. Below is the breakdown of the final accumulative grading:

- Individual Exercises 20 points
- Group Exercises 30 points
- Final Group project 30 points
- Final Written Exam 20 points

Attendance: Students are required to attend all sessions of the course.

- Excused absences - Students are permitted excused absences totaling no more than 10% of class (4.5 hours maximum); the instructor shall be the sole determining authority in the determination of an excused absence and may assign supplemental work to make up for missed class time.
- Unexcused absences - The instructor shall be the sole determining authority in the determination of an unexcused absence (i.e. "no call, no show"). The instructor has no obligation to offer the student an opportunity to make up assignments, including quizzes and/or exams, but may do so at his/her discretion.

Section V - Instructor Qualifications

As per Rule 69A-37.065, *Programs of Study and Vocational Courses*, instructors must meet the following qualifications to be authorized to teach this course:

Rule: 69A-37.065 Instructor Qualifications:

- a. An Instructor I must hold a certificate of competency as a Fire Safety Inspector II.
- b. Instructor II or III may teach provided he or she has successfully completed the course.

Section VI – Job Performance Requirements

Given information from discussion and reading materials, the student will satisfy the Job Performance Requirements (JPR) of the applicable National Fire Protection Association (NFPA) standards, any applicable skill sheets.

THE BUREAU OF FIRE STANDARDS AND TRAINING

AT
The Florida State Fire College

11655 NW GAINESVILLE ROAD • OCALA FLORIDA • 34482-1486
352.369.2800 • WWW.FLORIDASTATEFIRECOLLEGE.ORG

NFPA 1031, Standard for Possessional Qualifications for Fire Inspector and Plan Examiner, 2014
Edition

4.2.1 Prepare inspection reports, given agency policy and procedures, and observations from an assigned field inspection, so that the report is clear and concise and reflects the findings of the inspection in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Applicable codes and standards adopted by the jurisdiction and policies of the jurisdiction.

(B) Requisite Skills. The ability to conduct a field inspection, apply codes and standards, and communicate orally and in writing.

4.2.2 * Recognize the need for a permit, given a situation or condition, so that requirements for permits are communicated in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Permit policies of the jurisdiction and the rationale for the permit.

(B) Requisite Skills. The ability to communicate orally and in writing.

4.2.3 Recognize the need for plan review, given a situation or condition, so that requirements for plan reviews are communicated in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Plan review policies of the jurisdiction and the rationale for the plan review.

(B) Requisite Skills. The ability to communicate orally and in writing.

4.2.4 * Investigate common complaints, given a reported situation or condition, so that complaint information is recorded, the AHJ-approved process is initiated, and the complaint is resolved.

(A) Requisite Knowledge. Applicable codes and standards adopted by the jurisdiction and policies of the jurisdiction.

(B) Requisite Skills. The ability to apply codes and standards, communicate orally and in writing, recognize problems, and resolve complaints.

4.2.5 * Identify the applicable code or standard, given a fire protection, fire prevention, or life safety issue, so that the applicable document, edition, and section are referenced.

(A) Requisite Knowledge. Applicable codes and standards adopted by the jurisdiction.

(B) Requisite Skills. The ability to apply codes and standards.

4.2.6 Participate in legal proceedings, given the findings of a field inspection or a complaint and consultation with legal counsel, so that all information is presented, and the inspector's demeanor is professional.

(A) Requisite Knowledge. The legal requirements pertaining to evidence rules in the legal system and types of legal proceedings.

(B) Requisite Skills. The ability to maintain a professional courtroom demeanor, communicate, listen, and differentiate facts from opinions.

4.3 Field Inspection.

This duty involves fire safety inspections of new and existing structures and properties for construction, occupancy, fire protection, and exposures, according to the following job performance requirements.

4.3.1 Identify the occupancy classification of a single-use occupancy, given a description of the occupancy and its use, so that the classification is made according to the applicable codes and standards.
(A) Requisite Knowledge. Occupancy classification types; applicable codes, regulations, and standards adopted by the jurisdiction; operational features; and fire hazards presented by various occupancies.
(B) Requisite Skills. The ability to make observations and correct decisions.

4.3.2 Compute the allowable occupant load of a single-use occupancy or portion thereof, given a detailed description of the occupancy, so that the calculated allowable occupant load is established in accordance with applicable codes and standards.

(A) Requisite Knowledge. Occupancy classification; applicable codes, regulations, and standards adopted by the jurisdiction; operational features; fire hazards presented by various occupancies; and occupant load factors.

(B) Requisite Skills. The ability to calculate occupant loads, identify occupancy factors related to various occupancy classifications, use measuring tools, and make field sketches.

4.3.3 * Inspect means of egress elements, given observations made during a field inspection of an existing building, so that means of egress elements are maintained in compliance with applicable codes and standards and deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Applicable codes and standards adopted by the jurisdiction related to means of egress elements, maintenance requirements of egress elements, types of construction, occupancy egress requirements, and the relationship of fixed fire protection systems to egress requirements and to approved means of egress elements, including, but not limited to, doors, hardware, and lights.

(B) Requisite Skills. The ability to observe and recognize problems, calculate, make basic decisions related to means of egress, use measuring tools, and make field sketches.

4.3.4 * Verify the type of construction for an addition or remodeling project, given field observations or a description of the project and the materials being used, so that the construction type is identified and recorded in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Applicable codes and standards adopted by the jurisdiction, types of construction, rated construction components, and accepted building construction methods and materials.

(B) Requisite Skills. The ability to read plans, make decisions, and apply codes and standards.

4.3.5 * Determine the operational readiness of existing fixed fire suppression systems, given test documentation and field observations, so that the systems are in an operational state, maintenance is documented, and deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. A basic understanding of the components and operation of fixed fire suppression systems and applicable codes and standards.

(B) Requisite Skills. The ability to observe, make decisions, recognize problems, and read reports.

4.3.6 * Determine the operational readiness of existing fire detection and alarm systems, given test documentation and field observations, so that the systems are in an operational state, maintenance is documented, and deficiencies are identified, documented, and reported in accordance with the policies of the jurisdiction.

(A) Requisite Knowledge. A basic understanding of the components and operation of fire detection and alarm systems and devices and applicable codes and standards.

(B) Requisite Skills. The ability to observe, make decisions, recognize problems, and read reports.

4.3.7 * Determine the operational readiness of existing portable fire extinguishers, given field observations and test documentation, so that the equipment is in an operational state, maintenance is documented, and deficiencies are identified, documented, and reported in accordance with the policies of the jurisdiction.

(A) Requisite Knowledge. A basic understanding of portable fire extinguishers, including their components and placement, and applicable codes and standards.

(B) Requisite Skills. The ability to observe, make decisions, recognize problems, and read reports.

4.3.8 * Recognize hazardous conditions involving equipment, processes, and operations, given field observations, so that the equipment, processes, or operations are conducted and maintained in accordance with applicable codes and standards and deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Practices and techniques of code compliance inspections, fire behavior, fire prevention practices, ignition sources, safe housekeeping practices, and classification of hazardous materials.

(B) Requisite Skills. The ability to observe, communicate, apply codes and standards, recognize problems, and make decisions.

4.3.9 Compare an approved plan to an existing fire protection system, given approved plans and field observations, so that any modifications to the system are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Fire protection symbols and terminology.

(B) Requisite Skills. The ability to read and comprehend plans for fire protection systems, observe, communicate, apply codes and standards, recognize problems, and make decisions.

4.3.10 * Verify that emergency planning and preparedness measures are in place and have been practiced, given field observations, copies of emergency plans, and records of exercises, so that plans are prepared and exercises have been performed in accordance with applicable codes and standards and deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Requirements relative to emergency evacuation drills that are required within the jurisdiction, ways to conduct and/or evaluate fire drills in various occupancies, and human behavior during fires and other emergencies.

(B) Requisite Skills. The ability to identify the emergency evacuation requirements contained in the applicable codes and standards and interpret plans and reports.

4.3.11 * Inspect emergency access for an existing site, given field observations, so that the required access for emergency responders is maintained and deficiencies are identified, documented, and corrected in accordance with the applicable codes, standards, and policies of the jurisdiction.

(A) Requisite Knowledge. Applicable codes and standards, the policies of the jurisdiction, and emergency access and accessibility requirements.

(B) Requisite Skills. The ability to identify the emergency access requirements contained in the applicable codes and standards, observe, make decisions, and use measuring tools.

4.3.12 * Verify code compliance for incidental storage, handling, and use of flammable and combustible liquids and gases, given field observations and inspection guidelines from the AHJ, so that applicable

codes and standards are addressed and deficiencies are identified, documented, in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Classification, properties, labeling, storage, handling, and use of incidental amounts of flammable and combustible liquids and gases.

(B) Requisite Skills. The ability to observe, communicate, apply codes and standards, recognize problems, and make decisions.

4.3.13 * Verify code compliance for incidental storage, handling, and use of hazardous materials, given field observations, so that applicable codes and standards for each hazardous material encountered are addressed and deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Classification, properties, labeling, transportation, storage, handling, and use of hazardous materials.

(B) Requisite Skills. The ability to observe, communicate, apply codes and standards, recognize problems, and make decisions.

4.3.14 Recognize a hazardous fire growth potential in a building or space, given field observations, so that the hazardous conditions are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Basic fire behavior; flame spread and smoke development ratings of contents, interior finishes, building construction elements, decorations, decorative materials, and furnishings; and safe housekeeping practices.

(B) Requisite Skills. The ability to observe, communicate, apply codes and standards, recognize hazardous conditions, and make decisions.

4.3.15 * Determine code compliance, given the codes, standards, and policies of the jurisdiction and a fire protection issue, so that the applicable codes, standards, and policies are identified and compliance is determined.

(A) Requisite Knowledge. Basic fire behavior; flame spread and smoke development ratings of contents, interior finishes, building construction elements, life safety systems, decorations, decorative materials, and furnishings; and safe housekeeping practices.

(B) Requisite Skills. The ability to observe, communicate, apply codes and standards, recognize hazardous conditions, and make decisions.

4.3.16 Verify fire flows for a site, given fire flow test results and water supply data, so that required fire flows are in accordance with applicable codes and standards and deficiencies are identified, documented, and reported in accordance with the applicable codes and standards and the policies of the jurisdiction.

(A) Requisite Knowledge. Types of water distribution systems and other water sources in the local community, water distribution system testing, characteristics of public and private water supply systems, and flow testing procedures.

(B) Requisite Skills. The ability to use Pitot tubes, gauges, and other data gathering devices as well as calculate and graph fire flow results.

4.4 Plans Review.

There are no plan review job performance requirements for Fire Inspector I.

Section VII –Plan of Instruction

The following is the plan of instruction used during course offerings held at the Florida State Fire College. It also serves as the suggested instructional block format for other approved training providers who use the recommended text book. All class offerings **must** satisfy the JPRs listed in *Section VI – Job Performance Requirements* regardless of textbook used.

Day/Date	Chapters	Activities
Day 1	Class Introductions and Orientation Chapter 1 - Role of the Plans Examiner Chapter 2 - Plans Review Process Chapter 3 - Codes and Standards Activity - Architecture Scale Chapter 4 - Plan Sets Group/Individual Project Discussion and Assignment	<ul style="list-style-type: none"> • Paperwork • Introductions • Architecture Scale • Review of Final Project Presentation
Day 2	Quiz - Chapters 1-4 Chapter 5 - Site, Plot, Utility and Landscape Plans Chapter 6 - Architectural Plans Chapter 7 - Structural Plans Chapter 8 - Mechanical Plans	<ul style="list-style-type: none"> • Quiz 1 • Assignment 1 • Work on team project
Day 3	Quiz - Chapters 5-8 Chapter 9 - Electrical Plans Chapter 10 - Automatic Sprinkler & Standpipe Chapter 11 - Fire Alarms & Detection Systems	<ul style="list-style-type: none"> • Quiz 2 • Assignment 2 • Work on team project
Day 4	Quiz Chapters 9-11 Chapter 12 - Automatic Elevators, Fire Command Centers, and Fire Extinguisher and Smoke Control Systems Chapter 13 - Other Plans Reviews Related to Fire Protection Chapter 14 - Alternative Design Methods Chapter 15 Renovations & Tenant Improvements	<ul style="list-style-type: none"> • Quiz 3 • Assignment 3 • Work on team project
Day 5	Quiz Chapters 12-15 Final Project Presentations Final Exam Course Completion	<ul style="list-style-type: none"> • Quiz 4 • Team Presentation • Final Exam

Section VIII – Final Presentation and Grading Rubric (See sample below)

Description of Assignment:

The final project for this class involves a group presentation in PowerPoint format. All members are expected to contribute equally. The presentation should take no longer than 15 minutes and groups must submit a written summary of their work to accompany their presentation.

The final project consists of completing a drawing of a building (not on the Fire College campus) which outlines specific items fire service personnel should be aware of when responding to businesses in their response area. Students are permitted to utilize any drawing medium they desire but their work must be original. **DO NOT SUBMIT A DEPARTMENT ORIGINATED DRAWING. ALL WORK MUST BE ORIGINAL IN ORDER TO RECEIVE CREDIT.**

Format and Grading of Assignment:

Students will conduct and create a drawing of a pre-fire plan/building walkthrough within their response district. The drawing may be completed utilizing any drawing program (i.e. Microsoft Publisher, Visio, etc.) available. Students may create the drawing by hand.

The final project is worth 100 points towards the final grade. Scoring will be assigned according to the grading rubric. To receive full credit, the following elements need to be present:

- Legend defining symbols used
- Business name and address (upper left-hand corner)
- Directional indicator (top of page)
- Utilities shut offs (water, gas, electric, etc.)
- General building layout
- Hydrant location(s) and approximate distance from structure
- Sprinklered or Non-sprinklered building
- Other critical information (i.e. special hazards, alarm control panel, informational messages, light weight truss use, etc.)

Additionally, students must document significant building construction factors including (but not limited to) truss construction, old (pre-existing) or new construction, roof type, and construction type. Students must also identify any special hazard considerations regarding the structure that could pose additional challenges and/or risks to responding firefighters. For example, a building with significant roof loads (i.e. HVAC units) on top of truss construction would pose significant collapse hazard for interior crews.

		Rating				
		20	15	10	5	0
ut	Building layout is clearly defined and easy to understand; drawing provides clear indication of street and building access; drawing provides a clear understanding of additional information to be utilized by responding firefighters (i.e. caution messages)	Building layout is clearly defined and moderately easy to understand; drawing provides indication of street and building access; drawing provides a moderate understanding of additional information to be utilized by responding firefighters (i.e. caution messages)	Building layout is moderately defined but easy to understand; drawing provides indication of street or building access but not both; drawing provides a moderate understanding of additional information to be utilized by responding firefighters (i.e. caution messages)	Building layout is moderately defined and difficult to understand; drawing provides indication of street or building access but not both; drawing provides a moderate understanding of additional information to be utilized by responding firefighters (i.e. caution messages)	Building layout is moderately defined and difficult to understand; drawing provides indication of street or building access but not both; drawing provides a moderate understanding of additional information to be utilized by responding firefighters (i.e. caution messages)	Building layout is clearly defined and easy to understand; drawing provides clear indication of street and building access; drawing provides a clear understanding of additional information to be utilized by responding firefighters (i.e. caution messages)
	Legend is present and includes all symbols in drawing; symbols are unique respective to one another, clearly identified, and reflect locations on drawing; drawing specifically identifies location of all respective shut offs for utilities (water, gas, electric, and/or LPG)	Legend is present and includes most symbols in drawing; symbols are unique respective to one another, fairly identified, and reflect locations on drawing; drawing specifically identifies location of most respective shut offs for utilities (water, gas, electric, and/or LPG)	Legend is present and includes most symbols in drawing; symbols are not unique respective to one another, fairly identified, or reflect locations on drawing; drawing generally identifies location of most respective shut offs for utilities (water, gas, electric, and/or LPG)	Legend is present and includes some (less than 50%) symbols in drawing; symbols are not unique respective to one another, poorly identified, or do not reflect locations on drawing; drawing fails to identify location of most respective shut offs for utilities (water, gas, electric, and/or LPG)	Legend absent from drawing; symbols are unclear or unclear what they indicate; drawing fails to identify location of most respective shut offs for utilities (water, gas, electric, and/or LPG)	
	Drawing provides a clear hydrant locations and distance from structure; drawing provides clear indication of sprinkler system status; drawing indicates presence of FACP AND FDC locations (should indicate if not present in building)	Drawing provides hydrant locations and distance from structure; drawing provides clear indication of sprinkler system status; drawing indicates presence of FACP OR FDC locations or fails to indicate absence of either system in building	Drawing provides hydrant locations and distance from structure; drawing provides no indication of sprinkler system status; drawing indicates presence of FACP OR FDC locations or fails to indicate absence of either system in building	Drawing provides hydrant locations without distance from structure; drawing provides no indication of sprinkler system status; drawing does not indicate presence of FACP OR FDC locations or fails to indicate absence of either system in building	Drawing does not provide hydrant locations and distance from structure; drawing provides no indication of sprinkler system status; drawing does not indicate presence of FACP OR FDC locations or fails to indicate absence of either system in building	
	Business name and address are present in the upper left-hand corner; directional indicator is present at the top of the page; drawing provides a clear idea of hazards, access, and informational messages	Business name and address are present but not in the upper left-hand corner; directional indicator is present but not at the top of the page; drawing provides an idea of hazards, access, and informational messages	Business name and address OR directional indicator is not included in drawing; drawing provides a moderate idea of hazards, access, and informational messages	Business name and address OR directional indicator is not included in drawing; drawing provides a poor idea of hazards, access, and informational messages	Business name and address OR directional indicator is not included in drawing; drawing provides no idea of hazards, access, and informational messages	
	Student provides a minimum of four (4) building construction factors AND two (2) potential associated hazards in the building	Student provides a minimum of four (4) building construction factors AND one (1) potential associated hazard in the building	Student provides a minimum of three (3) building construction factors AND one (1) potential associated hazard in the building	Student provides a minimum of two (2) building construction factors AND one (1) potential associated hazard in the building	Student fails to provide a minimum of two (2) building construction factors OR one (1) potential associated hazard in the building	

Section IX – Review Date and Author

Date	Author
08/28/19	Gillingham, Bruce
10/19/16	Swartz, Michael