

**SAFM-534**  
**Fire Safety Management**  
Web Delivery  
Spring 2019 Condensed

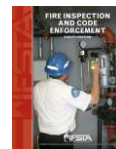
Instructor: Ken Tennant, [kenneth.tennant@mail.wvu.edu](mailto:kenneth.tennant@mail.wvu.edu)  
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Office Hours: Tuesday 6-7 p.m. or by appointment

**Textbooks:**

Fire Safety Management Handbook - 3<sup>rd</sup> Edition (2014)  
ISBN: 9781482221220, Publisher- CRC Press



Fire Inspection and Code Enforcement- 8<sup>th</sup> Edition (2016)  
ISBN 9780879396053, Publisher-Fire Protection Publications, Oklahoma State University



2015 Life Safety Code- Read only (Free on-line) NFPA.org  
2015 Fire Code- Read only (Free on-line) NFPA.org



**COURSE DESCRIPTION:**

Fire Safety Management is a 3-hour required course with a detailed analysis of fire services, usually provided under safety manager jurisdiction, with special attention to legal compliance, organizational structure, services rendered, training needs, and management techniques.

**COURSE FORMAT:**

This course is designed for web-based delivery consisting of learning modules, reading assignments, research, individual management reports, case studies, and code-based scenarios. Testing will be automated using the E-campus assessment interface. Individual projects and scenarios must be submitted electronically in a professional management format. Two textbooks will be used in addition to the learning modules. Free on-line fire code references will also be used to complete individual projects. The Spring 2019 web delivery will include the required traditional course goals, objectives, and assessments required by the department curriculum. Students should expect to spend extended time completing the required readings, recommended individual research topics, and other module extensions. The course is time and subject matter compressed and does not mirror all the traditional classroom aspects you would encounter in a lecture. Group projects will be modified to personal projects using a management submission format. Successful completion of the on-line course will prepare the student for all required course tracts (comprehensive, thesis, etc). As with all other Safety Management required courses, this delivery places the student into a management learning role. Students must think and act as new managers, and have a fundamental understanding of basic management techniques, theories, and philosophies. *This is a required graduate course that is more demanding and time consuming compared to an elective course. Please approach the course with that in mind.*

### COURSE LEARNING OBJECTIVES:

To assure upon completion of the Course, the student will be able to analyze a comprehensive fire service program, usually provided under safety management jurisdiction, with special attention to legal compliance, organizational structure, services rendered, training needs and management techniques. Upon completion of the Course the student will be able to:

- CLO1** Conduct the management of a fire prevention and abatement program.
- CLO2** Describe legal bases for establishing fire service operations (NFPA & IBC) and fire safety organizations and their management.
- CLO3** Evaluate effectiveness of fire prevention, detection, control and emergency systems.
- CLO4** Recommend qualifications, training and education of personnel in planning and use of fire service systems.
- CLO5** Describe hazard communications and hazardous materials.
- CLO6** Describe components of fire service communications and dispatching.
- CLO7** Evaluate Fire Prevention and Inspection Programs.
- CLO8** Identify and apply the characteristics of Fire Behavior and Chemistry.
- CLO9** Identify and review basic building construction types and features.

### **Assessments to Course Objectives:**

1. Analyze standards for fire prevention and protection thru various textbooks and code editions
2. Learning module completion and testing of core subjects
3. Individual projects based on knowledge of the legal bases, techniques, and codes promulgated by NFPA and IBC.
4. Analyze information gathered from literature searches and assigned reading projects
5. Virtual inspections of hazardous conditions.
6. On-line discussions
7. Midterm Examination
8. Management report submission in professional format
9. Case study submissions reports
10. Final examination.

### SOCIAL JUSTICE SYLLABUS STATEMENT:

West Virginia University is committed to social justice. I concur with that commitment and expect to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise and make appropriate arrangements with Disability Services (304-293-6700).

### ACADEMIC INTEGRITY DISHONESTY:

The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see WVU Course Catalogue:

<http://catalog.wvu.edu/undergraduate/coursecreditstermsclassification/#academicintegritytext>. Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me before the assignment is due to discuss the matter.

Graduate students should be well versed in academic integrity. Unfortunately, several students have taken advantage of other people's work in recent web delivered courses. Information gathered from other sources must be cited. Within the subject matter of this course, it becomes blatantly obvious to me if you cut and paste from other websites, etc. The term "academic dishonesty" means plagiarism; cheating and dishonest practices in connection with examinations, papers, and/or projects; and forgery, misrepresentation, or fraud as it relates to academic or educational matters. Dishonest work will not be tolerated and may lead to dismissal from the program.

### SALE OF MATERIALS

All course materials, including lectures, class notes, quizzes, exams, handouts, presentations, and other materials provided to students for this course are protected intellectual property. As such, the unauthorized purchase or sale of these materials may result in disciplinary sanctions under the Campus Student Code.

### A NOTE TO VISUALLY IMPAIRED STUDENTS

This course contains some images that contain text. Please be aware that the Center for Excellence in Disabilities provides a program called "Read-Write Gold" that will read the text in these images for you. This program is available at no cost to WVU students. If you need this service, please go to the [CED website](#) for more information. Link will open in a new window.

### TECHNICAL SUPPORT

Technical support regarding your use of eCampus is available by contacting 304-293-4444 (telephone), 1-877-327-9260 (toll free number), [itshelp@mail.wvu.edu](mailto:itshelp@mail.wvu.edu) (email), and/or <https://it.wvu.edu> (website).

Phone: [\(304\) 293-4444](tel:3042934444)

Toll Free: [1\(877\) 327-9260](tel:18773279260)

Email: [ITSHelp@mail.wvu.edu](mailto:ITSHelp@mail.wvu.edu)

### CONDENSED DELIVERY

Spring 2019 is delivered in an 8-week format. This is a time condensed required course which makes it more challenging to the student and instructor. There is a two-week period between the completion of module 6 and 7 to finish the major course project and prepare for the final exam. It is imperative that all course work be completed on-time. Falling behind even a few days could significantly alter your performance and grade.

CLASS AGENDA AND TOPICS: (*Condensed Course Begins: March 4, 2019*)

Books: FSMH (Fire Safety Management Handbook) FICE (Fire Inspection and Code Enforcement)

- Module 1 Course Overview  
Fire Safety Organizations and Management  
Reading Assignments-FSMH (Ch. 1, 3, 9, 10, 12) FICE (Intro + Ch. 1)  
Case Study  
Module Test  
**Module is due: March 8, 2019**
- Module 2 Fire Behavior and Chemistry  
Reading Assignments- FSMH (Ch. 2) FICE (Ch. 3)  
Case Study  
Module Test  
**Module is due: March 15, 2019**  
**\*Quiz is due: March 20, 2019**
- Module 3 Fire and Building Codes/Standards  
Reading Assignments- FSMH (Ch. 9 + Appendix) FICE (Ch. 1, 2)  
Code Scenarios  
Module Test  
Mid-Term Exam  
**Module is due: March 22, 2019**
- Module 4 Building Construction  
Code Scenarios due  
Reading Assignments- FSMH (Ch. 5) FICE (Ch. 4, 5, 6, 16)  
Module Test  
**Module is due: March 29, 2019**
- Module 5 Fire Detection, Suppression, and Control Systems  
Reading Assignments- FSMH (Ch. 6, 7) FICE (Ch. 9, 10, 11)  
Case Study  
Module Test  
**Module is due: April 5, 2019**
- Module 6 Fire Prevention and Inspection Programs  
Reading Assignments- FSMH (Ch. 3, 8, 10) FICE (Ch. 12, 17)  
Management Report Project  
Module Test  
**Module is due: April 12, 2019**
- Module 7 Hazardous Materials  
Reading Assignments- FSMH (Ch. 4) FICE (Ch. 14, 15)  
Module Test  
Case Study  
Management Report Due  
Final Exam  
**Module is due: April 26, 2019** *\*Final Exam and all assignments are due!*

### READING ASSIGNMENTS:

All reading assignments are critical to the student passing this course. The learning modules will provide a broad overview of the present subject matter, with key elements identified. Graphic illustrations and video support will also help the student obtain a starting point for further learning. The subject matter beyond the learning modules is very technical in nature and will require extended reading and individual research.

### GRADING:

The grading and course requirements are listed below. The grading is based on a system of points (250) accumulated on a variety of performance measures including automated tests and project submissions. Cumulative points will be awarded for the various activities with the point system listed below. There will be no make-up exams except for medical and other pertinent reasons. Module tests and submissions must be completed on the given schedule.

### COURSE REQUIREMENTS AND GRADING PLAN:

		Points
I	Module Tests @ 10 points each	70
II	Mid-Term Examination	60
III	Code Scenario (2) Case Studies (4) Quiz (1) @ 5 points each	35
IV	Management Report Project	25
V	Final Exam	60
	Total Points	250

### GRADE POINT SCALE

A	=	100 - 90%	=	250 - 225
B	=	89 - 80%	=	224 - 200
C	=	79 - 70%	=	199 - 175
D	=	69 - 60%	=	174 - 150
F	=	59 - 0%	=	149 - 0

### GRADING DETAILS:

#### ***Module Tests***

You will be tested on the content of each module (online material, text and other readings). The tests will consist of 5 short statement questions delivered by the E-Campus assessment application. Module tests are worth 10 points each.

### ***Mid-Term Examination***

The exam will cover Modules 1 through 3. Questions will be short statements, true or false, and multiple choice. The mid-term exam is worth 60 points and will be delivered by the E-Campus assessment application.

### ***Code Scenarios, Case Studies, Quiz***

There will be four case studies, two code scenarios, and one quiz, each worth 5 points each. Case studies will require individual research through course materials, and other resources to connect course objectives to real-world examples. Case study reports can be answered usually in 2-3 pages, with specific data and listed references, or a written summary of assigned subject. For example: Read the NFPA case study of the Station Inn Nightclub Fire. Summarize the code violations that lead to the deadly Station Inn fire of 2003. List and describe the code changes that were implemented in response to the tragedy.

Code Scenarios will require using on-line code resources to determine what requirements apply to a given scenario. For example: A code scenario may describe or illustrate (through text, pictures or video) a specific condition or plan. Management has decided to replace the existing stairways to the 2nd floor warehouse storage area. Using the Life Safety Code, summarize the details of the construction requirements for new stairs. What specific code sections apply to new stairs? Code scenarios can be answered in 2-3 pages.

There is one 10-question quiz that will be given after the completion of module 2. The questions are taken exclusively from the reading assignments for module 1 & 2.

### ***Management Report Project***

A virtual inspection of an industrial facility will be presented through photos, video, and provided data. First, you will develop your own inspection form or checklist to use with the video (1-3 pages). Next, you must present a report to upper management that identifies violations or areas of concern, and recommend corrective measures, training, etc. Conditions or processes that appear to be a possible liability not covered through prescriptive codes must be examined through risk evaluation and management. The report must be presented professionally within (3-5 pages), and may include charts or graphics such as power point, etc. Finally, you will develop an OSHA Fire Prevention Plan for the given facility (8-15 typed pages). The management report is worth 25 points.

### ***Final Exam***

Final Exam will cover modules 4 through 7 and will be short statements, true or false, and multiple choice. The final exam is worth 60 points and will be delivered by the E-Campus assessment application.

### **OBJECTIVES RUBRIC:**

As part of continuous improvement and quantitative metrics, each learning activity is associated with module and course level objectives. Please see the attached chart.

Module	Course Level Objectives	Module Level Objectives	Learning Activities
<b>Module 1:</b> Fire Safety Organization and Management	<b>CLO2/6</b>	<p><b>MILO1</b> List and describe the major fire safety management organizations currently available to assist the public and private sector.</p> <p><b>MILO2</b> Explain the historical significance of the National Fire Protection Association.</p> <p><b>MILO3</b> Navigate and research web pages of the major fire safety organizations.</p> <p><b>MILO4</b> Identify and compare the differences between public and private fire protection (industrial fire brigades, special services, etc.).</p> <p><b>MILO5</b> Analyze and explain the managerial aspects of fire safety management integration.</p>	<p>Read eCampus Module 1 (CLO2/6, MILO1-5)</p> <p>Read <i>Fire Safety Management</i> – Chapters 1, 3, 9, 10, 12 (CLO2/6, MILO1-5)</p> <p>Read <i>Fire Inspection and Code Enforcement</i> – Introduction, Chapter 1 (CLO2/6, MILO1-5)</p> <p>Read NFPA 600—Industrial Fire Brigade Standard (CLO2/6, MILO4)</p> <p>Read Module 1 Notes (CLO2/6, MILO1-5)</p> <p>Module 1 Discussion (CLO2/6, ML102)</p> <p>Module 1 Case Study (CLO2/6, MILO1, MILO3)</p> <p>Test 1 (CLO2/6, MILO1-MILO5)</p>
<b>Module 2:</b> Fire Behavior and Chemistry	<b>CLO8</b>	<p><b>M2LO1</b> List and describe the elements of the fire triangle and fire tetrahedron.</p> <p><b>M2LO2</b> Explain the physical and chemical changes of matter during the combustion process</p>	<p>Read eCampus Module 2 (CLO8, M2LO1-6)</p> <p>Read <i>Fire Safety Management</i> – Chapter 2 (CLO8, M2LO1-6)</p> <p>Read <i>Fire Inspection and Code</i></p>

<p><b>Module 2 Cont:</b></p>		<p><b>M2LO3</b> Identify and explain the methods of heat transfer, products of combustion, and the self-sustained chemical reaction of fire.</p> <p><b>M2LO4</b> List and explain the different classes of fires.</p> <p><b>M2LO5</b> Discuss the stages of compartmentalized fire development.</p> <p><b>M2LO6</b> Describe the methods used to control and extinguish fires of each class</p>	<p><i>Enforcement</i> – Chapter 3 (<b>CLO8</b>, <b>M2LO1-6</b>)</p> <p>Read Module 2 Notes (<b>CLO8</b>, <b>M2LO1-6</b>)</p> <p>Module 2 Case Study (<b>CLO8</b>, <b>M2LO3</b>, <b>M2LO5</b>, <b>M2LO6</b>)</p> <p>Quiz Modules 1-2 (<b>CL02/6/8</b>; <b>M1LO1/4/5</b>, <b>/M2LO2/3/4</b>)</p> <p>Test 2 (<b>CLO8</b>, <b>M2LO1-M2LO6</b>)</p>
<p><b>Module 3: Fire and Building Codes</b></p>	<p><b>CLO2/9</b></p>	<p><b>M3LO1</b> Explain the historical significance of fire codes in the United States.</p> <p><b>M3LO2</b> Define and explain codes, standards, and regulations.</p> <p><b>M3LO3</b> Discuss the two primary organizations that develop fire and building standards.</p> <p><b>M3LO4</b> Explain the differences and uses of prescriptive and performance based codes.</p> <p><b>M3LO5</b> Discuss the similarities and differences between fire and building codes.</p> <p><b>M3LO6</b> Recognize the extremely broad scope of the Life Safety Code.</p> <p><b>M3LO7</b> Use on-line code resources to research compliance issues.</p>	<p>Read eCampus Module 3 (<b>CLO2</b>, <b>M3LO1-8</b>)</p> <p>Read <i>Fire Safety Management</i> – Chapter 9 (<b>CLO2</b>, <b>M3LO1-8</b>)</p> <p>Read <i>Fire Inspection and Code Enforcement</i> – Chapters 1-2 (<b>CLO2</b>, <b>M3LO1-8</b>)</p> <p>Read Module 3 Notes (<b>CLO2</b>, <b>M3LO1-8</b>)</p> <p>Module 3 Discussion (<b>CL02</b>, <b>M3LO2</b>, <b>M3LO3</b> )</p> <p>Module 3 Code Scenarios (<b>CLO2/9</b>, <b>M3LO2</b>, <b>M3LO4</b>, <b>M3LO6</b>, <b>M3LO7</b> )</p> <p>Test 3 (<b>CLO2</b>, <b>M3LO1-8</b>)</p> <p>Midterm Exam (<b>CL02/6/8</b>, <b>M1LO1-5</b>, <b>M2LO1-6</b>, <b>M3LO1-8</b>)</p>



<b>Module 3 Cont:</b>		<b>M3LO8</b> Discuss the relevance of the fire safety provisions in OSHA regulations.	
<b>Module 4:</b> Building Construction	<b>CLO9</b>	<p><b>M4LO1</b> Identify and define the major construction types defined by Model Fire and Building Codes.</p> <p><b>M4LO2</b> Explain the inherent hazards, advantages, and disadvantages of each construction type components of and requirements for accessory property.</p> <p><b>M4LO3</b> Discuss the concept of construction compartmentalization.</p> <p><b>M4LO4</b> Describe both the advantages and limitations of “passive” fire protection features.</p> <p><b>M4LO5</b> Identify and discuss fire-rated partitions, fire walls, fire doors, and dampers.</p> <p><b>M4LO6</b> Recognize the importance of fire-stopping materials.</p> <p><b>M4LO7</b> Discuss the impact of interior finish materials, and the differences in classifications.</p> <p><b>M4LO8</b> Identify the major sections of site plans and construction drawings.</p>	<p>Read eCampus Module 4 (<b>CLO9</b>, <b>M4LO1-8</b>)</p> <p>Read <i>Fire Safety Management</i> – Chapter 5 (<b>CLO9</b>, <b>M4LO1-8</b>)</p> <p>Read <i>Fire Inspection and Code Enforcement</i> – Chapters 4, 5, 6, and 16 (<b>CLO9</b>, <b>M4LO1-8</b>)</p> <p>Read Module 4 Notes (<b>CLO9</b>, <b>M4LO1-8</b>)</p> <p>Test 4 (<b>CLO9</b>, <b>M4LO1-8</b>)</p>
<b>Module 5:</b> Fire Detection, Suppression, and Control Systems	<b>CLO3/8</b>	<b>M5LO1</b> Define and explain manual and automatic fire alarm systems, and their associated components.	<p>Read eCampus Module 5 (<b>CLO3/8</b>, <b>M5LO1-7</b>)</p> <p>Read <i>Fire Safety Management</i> –</p>

<p><b>Module 5 Cont:</b></p>		<p><b>M5LO2</b> Recognize the historical significance of early fire alarm and sprinkler systems</p> <p><b>M5LO3</b> Describe the components and functionality of the different types of sprinkler systems.</p> <p><b>M5LO4</b> Discuss the types of special agent suppression systems, and where they are needed or required.</p> <p><b>M5LO5</b> Describe the advantages, disadvantages, and limitations of “active” fire protection features.</p> <p><b>M5LO6</b> Identify and discuss each classification of portable fire extinguisher.</p> <p><b>M5LO7</b> Recognize special fire control systems such as stand pipes, smoke management and fire dampers.</p>	<p>Chapters 6-7 (<b>CLO3/8, M5LO1-7</b>)</p> <p>Read <i>Fire Inspection and Code Enforcement</i> – Chapters 9-11 (<b>CLO3/8, M5LO1-7</b>)</p> <p>Read Module 5 Notes (<b>CLO3/8, M5LO1-7</b>)</p> <p>Module 4 and 5 Discussion (<b>CL03/8/9, M4L04, M5L05</b>)</p> <p>Module 5 Case Study (<b>CLO3/6/8/9, M5LO3, M5LO5, M5LO7</b>)</p> <p>Test 5 (<b>CLO3/8, M5LO1-7</b>)</p>
<p><b>Module 6: Fire Prevention and Inspection</b></p>	<p><b>CLO1/4/7</b></p>	<p><b>M6LO1</b> List and explain the core elements (objectives) of a Fire Safety Management Program.</p> <p><b>M6LO2</b> Describe the minimum requirements of a required OSHA Fire Prevention Plan.</p> <p><b>M6LO3</b> Describe the minimum requirements of a required OSHA Emergency Action Plan.</p> <p><b>M6LO4</b> Describe the minimum requirements of a required Fire Code Emergency Plan.</p>	<p>Read eCampus Module 6 (<b>CLO1/4/7, M6LO1-8</b>)</p> <p>Read <i>Fire Safety Management</i> – Chapters 3, 8, and 10 (<b>CLO1/4/7, M6LO1-8</b>)</p> <p>Read <i>Fire Inspection and Code Enforcement</i> – Chapters 12 and 17 (<b>CLO1/4/7, M6LO1-8</b>)</p> <p>Read Module 6 Notes (<b>CLO1/4/7, M6LO1-8</b>)</p> <p>Module 6 Discussion (<b>CL04/7, M6L02-6</b>)</p>

<p><b>Module 6 Cont:</b></p>		<p><b>M6LO5</b> Recognize and Identify common fire and life safety hazards.</p> <p><b>M6LO6</b> List and discuss the major elements of a fire and life safety inspections.</p> <p><b>M6LO7</b> Explain the regulatory inspection process.</p> <p><b>M6LO8</b> Discuss the importance and requirements of recordkeeping.</p>	<p>Test 6 (<b>CLO1/4/7</b>, <b>M6LO1-8</b>)</p>
<p><b>Module 7: Hazardous Materials</b></p>	<p><b>CLO5</b></p>	<p><b>M7LO1</b> List and describe the nine classes of Hazardous Materials.</p> <p><b>M7LO2</b> Describe the minimum requirements of OSHA Hazard Communication regulations.</p> <p><b>M7LO3</b> Explain the purpose and contents of Safety Data Sheets (SDS or MSDS).</p> <p><b>M7LO4</b> Recognize, identify, and explain the NFPA 704 Hazard Marking System.</p> <p><b>M7LO5</b> Recognize and identify the Department of Transportation Placard System.</p> <p><b>M7LO6</b> Explain the importance of Maximum Allowable Quantities (MAQ's) of Hazardous Materials.</p> <p><b>M7LO7</b> Explain the importance of proper fire prevention measures when storing, handling, or transporting Hazardous Materials.</p>	<p>Read eCampus Module 7 (<b>CLO5</b>, <b>M7LO1-7</b>)</p> <p>Read <i>Fire Safety Management</i> – Chapter 4 (<b>CLO5</b>, <b>M7LO1-7</b>)</p> <p>Read <i>Fire Inspection and Code Enforcement</i> – Chapters 14-15 (<b>CLO5</b>, <b>M7LO1-7</b>)</p> <p>Read Module 7 Notes (<b>CLO5</b>, <b>M7LO1-7</b>)</p> <p>Individual Case Study (<b>CLO5</b>, <b>M7LO2</b>, <b>M7LO3</b>)</p> <p>Test 7 (<b>CLO5</b>, <b>M7LO1-7</b>) Final Exam (<b>CLO1-CLO5</b>, <b>CLO7</b>, <b>CLO9</b>, <b>M4LO1-8</b>, <b>M6LO1-8</b>, <b>M7O1-7</b>)</p>

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**### End of Syllabus ###**