Course Description

This course provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection, and portable fire extinguishers.

Course Textbook


Course Learning Objectives

Upon completion of this course, students should be able to:

1. Explain the benefits of fire protection systems in various types of structures.
2. Describe the basic elements of a public water supply system including sources, distribution networks, piping, and hydrants.
3. Explain why water is a widely used extinguishing agent and describe how water extinguishes fires.
4. Identify the different types and components of sprinkler, standpipe, and foam systems.
5. Define the benefits of residential sprinkler legislation.
6. Identify five different types of non-water based fire suppression systems and describe how these systems extinguish fire.
7. Describe the basic components of a fire alarm system.
8. Identify three different types of detectors and explain how they detect fire.
9. Describe the hazards of smoke and list the four factors that can influence smoke movement in a building.
10. Recognize the appropriate application of the different types of sprinklers.
11. Explain the operation and appropriate application for the different types of portable fire extinguishing systems.
12. Identify and analyze the causes involved in the line of duty firefighter deaths related to structural and wildland firefighting, training and research, and the reduction of emergency risks and accidents.

Credits

Upon completion of this course, the students will earn three (3) hours of college credit.

Course Structure

1. **Unit Learning Objectives**: Each unit contains Unit Learning Objectives that specify the measurable skills and knowledge students should gain upon completion of the unit.
2. **Written Lectures**: Each unit contains a Written Lecture, which discusses lesson material.
3. **Reading Assignments**: Each unit contains Reading Assignments from one or more chapters from the textbook. Supplemental Readings are provided in the Unit I-V, VII, and VIII study guides to aid students in their course of study.
4. **Learning Activities (Non-Graded)**: These non-graded Learning Activities are provided in Units I-VIII to aid students in their course of study.
5. **Key Terms**: Key Terms are intended to guide students in their course of study. Students should pay particular attention to Key Terms as they represent important concepts within the unit material and reading.
6. **Discussion Boards**: Discussion Boards are part of all CSU term courses. More information and specifications can be found in the Student Resources link listed in the Course Menu bar.
7. **Unit Assessments:** This course contains eight Unit Assessments, one to be completed at the end of each unit. Assessments are composed of multiple-choice, matching, and written response questions.

8. **Unit Assignments:** Students are required to submit for grading Unit Assignments in Units II, III, IV, VII, and VIII. Specific information and instructions regarding these assignments are provided below.

9. **Ask the Professor:** This communication forum provides you with an opportunity to ask your professor general or course content related questions.

10. **Student Break Room:** This communication forum allows for casual conversation with your classmates.

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**Unit Assignments**

**Unit II Scholarly Activity**

You currently serve as the fire inspector for a municipal fire department and are considered the authority having jurisdiction. A newly planned community is being developed within your jurisdiction, and you have the authority to approve the fire protection water supply system prior to installation. Additionally, you will be responsible for ensuring that inspections and testing of the fire protection water supply system is completed prior to the certification of any occupancy within the planned community. The planned community includes single-family dwellings, multi-family dwellings, commercial buildings, including businesses and mercantile occupancies, and assembly occupancies.

As part of your responsibilities as a fire inspector, you are to ensure that the appropriate type of hydrant is installed and that spacing is in accordance with the local code based on the occupancy types.

In no less than three double-spaced pages, list the type of hydrant to be installed, and why. Also, describe how the hydrants would be tested and maintained. Next, provide the spacing requirements based on your local jurisdiction's requirements (this could be where you reside). Include a diagram detailing these spacing requirements. Lastly, include the inspection requirements and items to review in regards to the fire protection water supply system.

All sources used, including the textbook, must be referenced; paraphrased and quoted material must have accompanying citations. Any references or citations used should be in APA style.

**Unit III Assignment**

Inspection and testing of sprinkler systems is a critical component to ensuring systems will operate when needed. For the Unit III Assignment, you are required to complete a safety inspection for one type of fire sprinkler system with the following inspection form:

Click [here](#) to access the Unit III Inspection Form

Include a brief summary (maximum of 200 words) of your experience along with the completed inspection form. Did you have to answer no to any questions? If so, why? Is this a concern? Did you have to answer NA to any questions, if so, why? Is this a concern?

All sources used, including the textbook, must be referenced; paraphrased and quoted material must have accompanying citations. Any references or citations used should be in APA style.

Click [here](#) to access a PDF of the grading rubric for this assignment.

**Unit IV Article Review**

In Chapter 8 of this unit’s reading assignment, special fire extinguishing systems were discussed, most notably water-mist fire suppression systems and foam fire extinguishing systems. These two types of extinguishing systems are used only in special circumstances as discussed in your textbook. For this assignment, choose a peer-reviewed article to review regarding the use of either one of these systems. Use the databases within the CSU Online Library, or use another source that contains peer-reviewed articles. The purpose of this assignment is for you to practice reviewing articles that contribute to the industry. The authors of these articles are researchers and professionals who have shared or experimented with ideas that demonstrate potential to improve the industry. As a professional in the industry, it is in your best interest to review the literature and trends. This provides you with the opportunity to read about what was successful and how it was accomplished. Plus, it allows you to analyze what was unsuccessful, how you can improve it, or at least how you can avoid repeating the mistakes of others. Use these skills to contribute to Research Papers and other scholarly
writings. If you have not already, hopefully, you will contribute to the industry by publishing an article and sharing with your community of peers.

As you read the article you choose for this assignment, consider the following questions: How could the topic of this article apply to your personal or professional life? How could it apply to an organization you have observed?

The article you choose must meet the following requirements:

- Be peer reviewed;
- Relate to the concepts within this course; and
- Be at least ten pages in length.

The writing you submit must meet the following requirements:

- Be at least two double-spaced pages in length;
- Identify the main topic/question;
- Identify the author’s intended audience;
- Summarize the article for page one; and
- Explain how the system was used within the building to suppress or extinguish the fire for page two.
- Do you feel that the system discussed within the article did enough to protect the building it was in as well as its occupants? Why, or why not?

Format your Article Review using APA style. Use your own words, and include citations and references as needed to avoid plagiarism.

Unit VII PowerPoint Presentation

You have been asked by a local company to conduct a training session on the placement, use, maintenance, and testing of portable fire extinguishers for the company’s staff. Create a PowerPoint presentation of no less than seven slides (not including the title and reference slides) instructing staff members on this subject. You may use the “Notes” section in PowerPoint if necessary. Please be sure to cite all references properly using APA format.

Unit VIII Research Paper

Throughout the course, we have covered the fire protection and life safety systems that may be found in buildings. These systems are designed for occupant safety, firefighter safety, and property protection. For the final assignment of the course, you will be required to complete a research paper covering at least five different fire protection systems.

For the research paper, you should include the following:

- At least five different fire protection systems. These may include fire alarm and connection systems, smoke management systems, fire suppression systems, special extinguishing systems, standpipes systems, and fire pumps, etc.
- A detailed description is to be provided for each system selected.
- A detailed analysis based on your search
  - For example, if you describe the automatic fire sprinkler system, details should be included on area of coverage, ratings of sprinkler heads, location of the fire department connection, location of the sprinkler riser, and confirmation on the type of sprinkler system, etc.
- Each fire protection system should include how it benefits occupant and firefighter safety (tactical advantages).

Your Research Paper must:

- Be a maximum of 10 pages (Title Page, 6-8 pages of content, Reference Page).
- Be typed, double-spaced, using Times New Roman font (size 12), with one-inch margins on all sides; citations and references must follow APA format.
- Include a cover page containing the title of the assignment, the student’s name, the professor’s name, the course title, and the date.
- Include a reference page. You are encouraged to use your textbook as a reference source in order to write a professional level analysis. All sources must be properly referenced both in-text and on the Reference Page. Make sure to use APA format.
Click [here](#) to access a PDF of the grading rubric for this assignment.

**APA Guidelines**

The application of the APA writing style shall be practical, functional, and appropriate to each academic level, with the primary purpose being the documentation (citation) of sources. CSU requires that students use APA style for certain papers and projects. Students should always carefully read and follow assignment directions and review the associated grading rubric when available. Students can find CSU’s Citation Guide by clicking [here](#). This document includes examples and sample papers and provides information on how to contact the CSU Success Center.

**Grading Rubrics**

This course utilizes analytic grading rubrics as tools for your professor in assigning grades for all learning activities. Each rubric serves as a guide that communicates the expectations of the learning activity and describes the criteria for each level of achievement. In addition, a rubric is a reference tool that lists evaluation criteria and can help you organize your efforts to meet the requirements of that learning activity. It is imperative for you to familiarize yourself with these rubrics because these are the primary tools your professor uses for assessing learning activities.

Rubric categories include: (1) Discussion Board, (2) Assessment (Written Response), and (3) Assignment. However, it is possible that not all of the listed rubric types will be used in a single course (e.g., some courses may not have Assessments).

The Discussion Board rubric can be found within Unit I’s Discussion Board submission instructions.

The Assessment (Written Response) rubric can be found embedded in a link within the directions for each Unit Assessment. However, these rubrics will only be used when written-response questions appear within the Assessment.

Each Assignment type (e.g., article critique, case study, research paper) will have its own rubric. The Assignment rubrics are built into Blackboard, allowing students to review them prior to beginning the Assignment and again once the Assignment has been scored. This rubric can be accessed via the Assignment link located within the unit where it is to be submitted. Students may also access the rubric through the course menu by selecting “Tools” and then “My Grades.”

*Again, it is vitally important for you to become familiar with these rubrics because their application to your Discussion Boards, Assessments, and Assignments is the method by which your instructor assigns all grades.*

**Communication Forums**

These are non-graded discussion forums that allow you to communicate with your professor and other students. Participation in these discussion forums is encouraged, but not required. You can access these forums with the buttons in the Course Menu. Instructions for subscribing/unsubscribing to these forums are provided below.

[Click here for instructions on how to subscribe/unsubscribe and post to the Communication Forums.](#)

**Ask the Professor**

This communication forum provides you with an opportunity to ask your professor general or course content questions. Questions may focus on Blackboard locations of online course components, textbook or course content elaboration, additional guidance on assessment requirements, or general advice from other students.

Questions that are specific in nature, such as inquiries regarding assessment/assignment grades or personal accommodation requests, are NOT to be posted on this forum. If you have questions, comments, or concerns of a non-public nature, please feel free to email your professor. Responses to your post will be addressed or emailed by the professor within 48 hours.

Before posting, please ensure that you have read all relevant course documentation, including the syllabus, assessment/assignment instructions, faculty feedback, and other important information.
Student Break Room

This communication forum allows for casual conversation with your classmates. Communication on this forum should always maintain a standard of appropriateness and respect for your fellow classmates. This forum should NOT be used to share assessment answers.

Grading

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<thead>
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<th>Component</th>
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<tr>
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<td>Unit Assessments (8 @ 4%)</td>
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<td>Article Review</td>
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<td><strong>Total</strong></td>
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Course Schedule/Checklist (PLEASE PRINT)

The following pages contain a printable Course Schedule to assist you through this course. By following this schedule, you will be assured that you will complete the course within the time allotted.
By following this schedule, you will be assured that you will complete the course within the time allotted. Please keep this schedule for reference as you progress through your course.

## Unit I  Introduction to Fire Protection Systems

| Review: |  □ Unit Study Guide  
|         |  □ **Learning Activities (Non-Graded):** See Study Guide |
| Read:   |  □ Chapter 1: Overview of Fire Detection and Suppression Systems  
|         |  □ **Supplemental Reading:** See Study Guide |
| Discuss:|  □ **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)  
|         |  □ **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time) |
| Submit: |  □ **Assessment** by Tuesday, 11:59 p.m. (Central Time) |

Notes/Goals:

## Unit II  Water Supply Systems

| Review: |  □ Unit Study Guide  
|         |  □ **Learning Activities (Non-Graded):** See Study Guide |
| Read:   |  □ Chapter 4: Water Supply Systems  
|         |  □ **Supplemental Reading:** See Study Guide |
| Discuss:|  □ **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)  
|         |  □ **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time) |
| Submit: |  □ **Assessment** by Tuesday, 11:59 p.m. (Central Time)  
|         |  □ **Scholarly Activity** by Tuesday, 11:59 p.m. (Central Time) |

Notes/Goals:

## Unit III  Water-based Fire Suppression Systems—Sprinkler Systems

| Review: |  □ Unit Study Guide  
|         |  □ **Learning Activities (Non-Graded):** See Study Guide |
| Read:   |  □ Chapter 6: Automatic Sprinkler Systems  
|         |  □ **Supplemental Reading:** See Study Guide |
| Discuss:|  □ **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)  
|         |  □ **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time) |
| Submit: |  □ **Assessment** by Tuesday, 11:59 p.m. (Central Time)  
|         |  □ **Assignment** by Tuesday, 11:59 p.m. (Central Time) |

Notes/Goals:
# Unit IV: Water-based Fire Suppression Systems—Fire Pump and Standpipe and Hose Systems

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<td>Chapter 7: Standpipe and Hose Systems</td>
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<td></td>
<td>Chapter 8: Special Extinguishing Systems, pp. 197-207</td>
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<td>Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time)</td>
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<td>Submit:</td>
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## Notes/Goals:

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# Unit V: Fire Detection and Alarm Systems

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<td>Read:</td>
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## Notes/Goals:

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# Unit VI: Non-water Based Fire Suppression Systems

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<tr>
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<td>Discuss:</td>
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<td>Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time)</td>
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<td>Submit:</td>
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## Notes/Goals:

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# BFS 3460, Fire Protection Systems

## Course Schedule

### Unit VII: Portable Fire Extinguishers

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<th>Task Type</th>
<th>Task Description</th>
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</table>
| Review:   | - Unit Study Guide  
            - **Learning Activities (Non-Graded):** See Study Guide |
| Read:     | - **Chapter 9:** Portable Fire Extinguishers  
            - **Supplemental Reading:** See Study Guide |
| Discuss:  | - **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)  
            - **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time) |
| Submit:   | - **Assessment** by Tuesday, 11:59 p.m. (Central Time)  
            - **PowerPoint Presentation** by Tuesday, Midnight (Central Time) |

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### Notes/Goals:

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### Unit VIII: Smoke Management Systems

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<th>Task Type</th>
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| Review:   | - Unit Study Guide  
            - **Learning Activities (Non-Graded):** See Study Guide |
| Read:     | - **Chapter 3:** Smoke Management Systems  
            - **Supplemental Reading:** See Study Guide |
| Discuss:  | - **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)  
            - **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time) |
| Submit:   | - **Assessment** by Tuesday, 11:59 p.m. (Central Time)  
            - **Research Paper** by Tuesday, 11:59 p.m. (Central Time) |

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### Notes/Goals: