Course Description

Overview of building construction, building types, designs of structures, and a knowledge of building construction in relation to firefighting.

Prerequisites

None

Course Textbook


Course Learning Objectives

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

1. Analyze the importance of pre-fire planning and its role in firefighting operations.
2. Assess the importance of studying and understanding building construction principles and terminology as they relate to firefighter safety.
3. Compare the relationship between risk and benefit and its impact on firefighter safety.
4. Differentiate the variety of forces and the types of loads buildings are subject to.
5. Examine and identify the basic regulations that apply to building construction projects.
6. Compare and describe the role of various individuals involved in building construction, renovation or demolition of a building.
7. Evaluate the hazards to firefighters from different types of materials used in construction of buildings.
8. Contrast the basis and development of the various building and fire codes.
9. Describe the basic concepts of fire protection systems and building construction.
10. Examine the basics of fire behavior and explain ways in which smoke and fire containment is achieved.
11. Compare the features of wood frame construction, trusses and identify their behavior in fire.
12. Evaluate the different aspects of heavy timber construction and its behavior in fire.
13. Discuss the details of ordinary construction and its behavior in fire.
14. Distinguish between noncombustible and fire-resistive construction and different types of steel structural systems.
15. Recognize the different types of concrete structural systems and the hazards of formwork.
16. Discuss the concept of compartmentalization and fire spread.
17. Classify the design and construction details in buildings based on occupancy types.
18. Evaluate the hazards associated with specific occupancies and firefighting operations.
19. Assess the greatest hazard to firefighters on the fire ground – structural collapse.

Credits

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

1. **Unit Summaries**: Each unit contains an overview, or summary, of the information to be covered.
2. **The Unit Learning Objectives**: Each unit contains learning objectives that specify the measurable skills and knowledge students should gain upon completion of the unit.
3. **Reading Assignments**: Each unit contains reading assignments from one or more chapters from the textbook.
4. **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.
5. **Discussion Boards**: Discussion Boards are a part of all CSU term courses. Information and specifications regarding these assignments are provided in the Academic Policies listed in the Course Menu bar.
6. **Assessments**: This course contains seven unit assessments to be completed at the end of Units I-VII.
7. **Research Paper**: Information and specifications regarding this assignment are provided in the syllabus below.
8. **Ask the Professor**: is a communication forum that provides the student an opportunity to ask course content or general questions to your professor.
9. **Student Break Room**: This communication forum allows for casual conversation with your classmates.

Research Paper

Please select and answer one of the following questions in a well-organized and researched 5-7-page paper related to issues and trends in this course. Your paper must contain at least five Internet sources, in addition to professional journal articles or resources related to the profession.

1. Analyze and review general building design and construction methods and explain the types of collapses that may occur. Explain how the knowledge of these failures has impacted changes in building codes.
2. Describe the history of building construction changes in the context of fire safety and prevention. What are examples of major cases in United States history which have led to changes in building construction? How has the forensic analysis from the September 11, 2001 terrorist attacks impacted building construction codes and construction practices?
3. Analyze and describe the three parts of the means of egress. Investigate egress design and explore the evolution of fire code administration history and current functions related to this topic. Explain the elements of code administration, inspection practices, and the appeals process in code enforcement.
4. A topic you select with the consent of your professor.

Students are required to submit the Course Research Paper typed in MS Word using the APA style format, double-spaced with 1-inch margins (top, bottom, and sides). The project must be submitted in 12pt Times New Roman, and with proper APA heading guidelines followed. Evaluations will use the 60/40 Rule based on 100 points, where 60% of the paper grade is discerned by overall content, with 40% of the grade according to the following:

1. Appropriate in-text citation of sources = 5 points
2. Appropriate reference page = 5 points
3. Adherence to grammar/syntax rules = 5 points
4. Adequate controlling idea/thesis statement = 5 points
5. Incorporation of relevant/recent sources = 10 points
6. Incorporation of relevant personal/professional experience = 10 points

Submit your Research Paper by uploading it through the "View/Complete" link located in Unit VIII. **Do not e-mail your Research Paper directly to your professor.** By uploading using SafeAssing, your university record will automatically be updated to indicate you have submitted your paper and it will be provided to your professor for grading.

APA Guidelines

CSU requires that students use the APA style for papers and projects. Therefore, the APA rules for formatting, quoting, paraphrasing, citing, and listing of sources are to be followed. A document titled “APA Guidelines Summary” is available for you to download from the APA Guide Link, found in the Learning Resources area of the myCSU Student Portal. It may also be accessed from the Student Resources link on the Course Menu. This document provides links to several internet sites that provide comprehensive information on APA formatting, including examples and sample papers.
CSU Grading Rubric for Papers/Projects

The course papers will be graded based on the CSU Grading Rubric for all types of papers. In addition, all papers will be submitted for electronic evaluation to rule out plagiarism. Course projects will contain project specific grading criteria defined in the project directions. To view the rubric, click the Academic Policies link on the Course Menu, or by accessing the CSU Grading Rubric link, found in the Learning Resources area of the myCSU Student Portal.

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

Discussion Boards (8 @ 2% each) = 16%
Unit Assessments (7 @ 8% each) = 56%
Research Paper (Unit VIII) = 28%
Total = 100%

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.
# Course Schedule

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 and Concepts of Construction

<table>
<thead>
<tr>
<th>Review</th>
<th>Unit Study Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read</td>
<td>Chapter 1: Introduction</td>
</tr>
<tr>
<td></td>
<td>Chapter 2: Concepts of Construction</td>
</tr>
<tr>
<td>Discuss</td>
<td>Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)</td>
</tr>
<tr>
<td>Submit</td>
<td>Assessment by Tuesday, Midnight (Central Time)</td>
</tr>
</tbody>
</table>

Notes/Goals:

## Unit II
### Materials for Building Construction, Building and Fire Codes

<table>
<thead>
<tr>
<th>Review</th>
<th>Unit Study Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read</td>
<td>Chapter 3: Methods and Materials of Construction, Renovation, and Demolition</td>
</tr>
<tr>
<td></td>
<td>Chapter 4: Building and Fire Codes</td>
</tr>
<tr>
<td>Discuss</td>
<td>Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)</td>
</tr>
<tr>
<td></td>
<td>Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time)</td>
</tr>
<tr>
<td>Submit</td>
<td>Assessment by Tuesday, Midnight (Central Time)</td>
</tr>
</tbody>
</table>

Notes/Goals:

## Unit III
### Features of Fire Protection

<table>
<thead>
<tr>
<th>Review</th>
<th>Unit Study Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read</td>
<td>Chapter 5: Features of Fire Protection</td>
</tr>
<tr>
<td>Discuss</td>
<td>Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)</td>
</tr>
<tr>
<td></td>
<td>Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time)</td>
</tr>
<tr>
<td>Submit</td>
<td>Assessment by Tuesday, Midnight (Central Time)</td>
</tr>
</tbody>
</table>

Notes/Goals:
### Unit IV
**Wood Frame Construction**

**Review:**
- [ ] Unit Study Guide

**Read:**
- [ ] Chapter 6: Wood Frame Construction

**Discuss:**
- [ ] Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)
- [ ] Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time)

**Submit:**
- [ ] Assessment by Tuesday, Midnight (Central Time)

**Notes/Goals:**

### Unit V
**Heavy Timber, Mill and Ordinary Construction**

**Review:**
- [ ] Unit Study Guide

**Read:**
- [ ] Chapter 7: Heavy Timber and Mill Construction
- [ ] Chapter 8: Ordinary Construction

**Discuss:**
- [ ] Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)
- [ ] Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time)

**Submit:**
- [ ] Assessment by Tuesday, Midnight (Central Time)

**Notes/Goals:**

### Unit VI
**Noncombustible and Fire-Resistive Construction**

**Review:**
- [ ] Unit Study Guide

**Read:**
- [ ] Chapter 9: Noncombustible Construction
- [ ] Chapter 10: Fire-Resistive Construction

**Discuss:**
- [ ] Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)
- [ ] Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time)

**Submit:**
- [ ] Assessment by Tuesday, Midnight (Central Time)

**Notes/Goals:**
### Unit VII: Specific Occupancy Hazards, Building Collapse

<table>
<thead>
<tr>
<th>Review:</th>
<th>□ Unit Study Guide</th>
</tr>
</thead>
</table>
| Read: | □ Chapter 11: Specific Occupancy Details and Hazards  
□ Chapter 12: Collapse |
| Discuss: | □ Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)  
□ Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time) |
| Submit: | □ Assessment by Tuesday, Midnight (Central Time) |

Notes/Goals:

### Unit VIII: Summary and Review

<table>
<thead>
<tr>
<th>Review:</th>
<th>□ Unit Study Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read:</td>
<td>□ Chapters 1-12: Review course material in preparation for the Research Paper</td>
</tr>
</tbody>
</table>
| Discuss: | □ Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)  
□ Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time) |
| Submit: | □ Research Paper by Tuesday, Midnight (Central Time) |

Notes/Goals: