Course Description

Provides an overview of building construction, building types, designs of structures, and building construction in relation to firefighting.

Course Textbook


Course Learning Outcomes

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

1. Describe building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, firefighting strategy, and tactics.
2. Classify major types of building construction in accordance with a local/model building code.
3. Analyze the hazards and tactical considerations associated with the various types of building construction.
4. Explain the different loads and stresses that are placed on a building and their interrelationships.
5. Identify the function of each principle structural component in typical building design.
6. Differentiate between fire resistance and flame spread, and describe the testing procedures used to establish ratings for each.
7. Classify occupancy designations of the building code.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.
9. Identify the role of the Geographic Information System (GIS) as it relates to building construction.

Credits

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

Course Structure

1. **Unit Learning Outcomes**: Each unit contains Learning Outcomes that specify the measurable skills and knowledge students should gain upon completion of the unit.
2. **Unit Lesson**: Each unit contains a Unit Lesson, which discusses unit material.
3. **Reading Assignments**: Each unit contains Reading Assignments from one or more chapters from the textbook.
4. **Learning Activities (Non-Graded)**: These non-graded Learning Activities are provided in Units I-VII 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. **Unit Assessments**: This course contains eight Unit Assessments, one to be completed at the end of each unit. Assessments are composed of written response questions.
7. **Unit Assignments**: Students are required to submit for grading Unit Assignments in Units II, IV, VI, and VIII. Specific information and instructions regarding these assignments are provided below. Grading rubrics are included with each assignment. Specific information about accessing these rubrics is provided below.
8. **Ask the Professor:** This communication forum provides you with an opportunity to ask your professor general or course content related questions.

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

**CSU Online Library**

The CSU Online Library is available to support your courses and programs. The online library includes databases, journals, e-books, and research guides. These resources are always accessible and can be reached through the library webpage. To access the library, log into the myCSU Student Portal, and click on “CSU Online Library.” You can also access the CSU Online Library from the “My Library” button on the course menu for each course in Blackboard.

The CSU Online Library offers several reference services. E-mail (library@columbiasouthern.edu) and telephone (1.877.268.8046) assistance is available Monday – Thursday from 8 am to 5 pm and Friday from 8 am to 3 pm. The library’s chat reference service, *Ask a Librarian*, is available 24/7; look for the chat box on the online library page.

Librarians can help you develop your research plan or assist you in finding relevant, appropriate, and timely information. Reference requests can include customized keyword search strategies, links to articles, database help, and other services.

**Unit Assignments**

**Unit II PowerPoint Presentation**

You are a company officer and have been asked to participate as an instructor in an upcoming academy for officer development addressing strategy and tactics in the fire service.

Develop a PowerPoint presentation of 8-12 slides that explains each of the major types of building construction. In addition, your presentation should address concerns about firefighter safety in relation to the construction types that are located in your jurisdiction. Please provide specific examples. Use at least two graphics to help support your presentation.

You are required to use APA formatting for any references you use.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

**Unit IV Case Study**

Several companies are combating a working structure fire in a three-story, Victorian-style, balloon-frame house with a basement. The fire originated in the basement and spread to the main, or first floor. Although fire on the main floor had been suppressed, there is still active fire in the attic. The second floor does not seem to have any fire involvement.

Identify the function of each principle, structural component in typical building design.

In your response, please identify the following:

- **Major issues:** Identify the major problems that should be considered given the scenario, building construction, structural components associated with a balloon frame house, and the hazards of the fire spread, as described.
- **Potential solutions:** Provide potential solutions for the major issues identified and any other problems associated with the scenario. Often there is more than one solution, so it is useful to evaluate each solution in terms of its advantages and disadvantages. This will also assist in determining your recommendations.
- **Recommendations:** This section should outline your recommendations based upon the proposed solutions for each of the identified problems.

Your paper should be at least two pages in length. You are required to use APA formatting and to cite any references used.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.
Unit VI Case Study

Following the collapse of the Twin Towers on 9/11, the fire service has undergone a transformation in its response in order to avoid another disaster of this magnitude. For this case study assignment, you will need to describe the changes that the fire service has undergone in relation to building design and construction, and to the application of building and fire codes.

In your case study, please identify the following:

- **Major changes**: Identify the major changes, including the main reason for the transformation in this section.
- **Additional solutions**: This section evaluates additional potential solutions that have not yet occurred as a result of 9/11. Often there is more than one solution, so it is useful to evaluate each potential solution in terms of its advantages and disadvantages.

This will also assist in determining your recommendations.

- **Recommendations**: This section should outline your recommendations, based upon each of the potential solutions in comparison to the changes that have already occurred.

Include a reference page in APA format, and be sure to use at least two resources from the CSU Online Library.

Your assignment should meet the following guidelines:

- be a minimum of two pages (not including your reference page),
- be formatted using APA style, and
- include citations for other articles, as needed to avoid plagiarism.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

Unit VIII Research Paper

Please read the next paragraph, and follow the directions by writing a well-organized and researched five- to seven-page paper related to building construction topics discussed throughout this course. Your paper must contain at least five Internet sources in addition to professional journal articles or resources related to the profession.

Please provide an overview of building construction, including the various building types, designs of structures, and the application of building and fire codes. Describe the effect of building construction in relation to firefighting operations, the hazards associated with building types, and the effects of fire on each type. Finally, discuss building collapse and the awareness that firefighters should maintain on the fireground.

Students are required to submit the research paper typed in MS Word using the APA style format.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

**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) Assessment (Written Response) and (2) 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 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 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.

Once you have completed Unit VIII, you MUST unsubscribe from the forum; otherwise, you will continue to receive e-mail updates from the forum. You will not be able to unsubscribe after your course end date.

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 e-mail your professor. Responses to your post will be addressed or e-mailed 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

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessments (8 @ 6%)</td>
<td>48%</td>
</tr>
<tr>
<td>Unit II PowerPoint Presentation</td>
<td>8%</td>
</tr>
<tr>
<td>Case Studies (2 @ 7%)</td>
<td>14%</td>
</tr>
<tr>
<td>Unit VIII Research Paper</td>
<td>30%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
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</table>

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.

<table>
<thead>
<tr>
<th>Unit I</th>
<th>Introduction and Concepts of Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review:</td>
<td>Unit Study Guide</td>
</tr>
<tr>
<td></td>
<td>Learning Activities (Non-Graded): See Study Guide</td>
</tr>
<tr>
<td>Read:</td>
<td>Chapter 1: Introduction</td>
</tr>
<tr>
<td></td>
<td>Chapter 2: Concepts of Construction</td>
</tr>
<tr>
<td>Submit:</td>
<td>Assessment</td>
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</tbody>
</table>

Notes/Goals:

<table>
<thead>
<tr>
<th>Unit II</th>
<th>Materials for Building Construction, Building and Fire Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review:</td>
<td>Unit Study Guide</td>
</tr>
<tr>
<td></td>
<td>Learning Activities (Non-Graded): See Study Guide</td>
</tr>
<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>
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<td>Submit:</td>
<td>Assessment</td>
</tr>
<tr>
<td></td>
<td>PowerPoint Presentation</td>
</tr>
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</table>

Notes/Goals:

<table>
<thead>
<tr>
<th>Unit III</th>
<th>Fire Behavior and Building Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review:</td>
<td>Unit Study Guide</td>
</tr>
<tr>
<td></td>
<td>Learning Activities (Non-Graded): See Study Guide</td>
</tr>
<tr>
<td>Read:</td>
<td>Chapter 5: Fire Behavior and Building Construction</td>
</tr>
<tr>
<td>Submit:</td>
<td>Assessment</td>
</tr>
</tbody>
</table>

Notes/Goals:
### Unit IV: Features of Fire Protection, Wood Frame Construction

**Review:**
- □ Unit Study Guide
- □ **Learning Activities (Non-Graded):** See Study Guide

**Read:**
- □ Chapter 6: Features of Fire Protection
- □ Chapter 7: Wood-Frame Construction

**Submit:**
- □ Assessment
- □ Case Study

**Notes/Goals:**

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

**Review:**
- □ Unit Study Guide
- □ **Learning Activities (Non-Graded):** See Study Guide

**Read:**
- □ Chapter 8: Heavy Timber and Mill Construction
- □ Chapter 9: Ordinary Construction

**Submit:**
- □ Assessment

**Notes/Goals:**

### Unit VI: Noncombustible and Fire Resistive Construction

**Review:**
- □ Unit Study Guide
- □ **Learning Activities (Non-Graded):** See Study Guide

**Read:**
- □ Chapter 10: Noncombustible Construction
- □ Chapter 11: Fire-Resistive Construction

**Submit:**
- □ Assessment
- □ Case Study

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

**Review:**
- Unit Study Guide
- **Learning Activities (Non-Graded):** See Study Guide

**Read:**
- Chapter 12: Firefighting Concerns of Green Construction
- Chapter 13: Specific Occupancy-Related Construction Hazards

**Submit:**
- Assessment

### Unit VIII: Building Collapse

**Review:**
- Unit Study Guide

**Read:**
- Chapter 14: Collapse

**Submit:**
- Assessment
- Research Paper

Notes/Goals: