

# FIRE 0008 - BUILDING CONSTRUCTION FOR FIRE PROTECTION

## Catalog Description

Advisory: Completion with grade of "C" or better or concurrent enrollment in FIRE 1

Hours: 54 lecture

Description: Components of building construction related to firefighter and life safety. Elements of construction and design of structures as key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. (C-ID FIRE 130X) (CSU-with unit limitation)

## Course Student Learning Outcomes

- CSLO #1: Assess the importance of studying building construction as it relates to firefighter safety and fire ground operations.
- CSLO #2: Compare and contrast the various types of building construction and how they behave under fire conditions.
- CSLO #3: Describe the construction materials used in different building types.
- CSLO #4: Develop building construction terms.

## Effective Term

Fall 2019

## Course Type

Credit - Degree-applicable

## Contact Hours

54

## Outside of Class Hours

108

## Total Student Learning Hours

162

## Course Objectives

1. Identify various classifications of building construction;
2. Outline theoretical concepts of how fire impacts major types of building construction;
3. Describe building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, firefighting strategy, and tactics;
4. Classify major types of building construction in accordance with a local/model building code;
5. Analyze the hazards and tactical considerations associated with the various types of building construction;
6. Explain the different loads and stresses that are placed on a building and their interrelationships;
7. Identify the function of each principle structural component in typical building design;
8. Differentiate between fire resistance, flame spread, and describe the testing procedures used to establish ratings for each;

9. Classify occupancy designations of the building code;
10. Identify the indicators of potential structural failure as they relate to firefighter safety;
11. Identify the role of GIS as it relates to building construction.

## General Education Information

- Approved College Associate Degree GE Applicability
- CSU GE Applicability (Recommended-requires CSU approval)
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

## Articulation Information

- CSU Transferable

## Methods of Evaluation

- Classroom Discussions
  - Example: Following a lecture on different loads and stresses that are placed on a building, students are expected to participate in a discussion providing examples of loads and stresses in buildings they most frequent, i.e. stores, malls, homes, gas stations, etc.. Students are evaluated on participation, rational and correctness of responses.
- Objective Examinations
  - Example: Students will take a multiple choice test on the various types of building construction. Standard Grading. Objective 4. Example: Name the five types of building construction?
- Problem Solving Examinations
  - Example: While working in small groups, students are to identify and differentiate occupancy classifications from building photos provided by the instructor. Students/groups are evaluated based upon their ability to correctly identify and/or differentiate occupancy classifications.
- Reports
  - Example: Students will write a report on structural failure and/or collapse. They are to identify the indicators of potential structure failure as they relate to firefighter safety. Students will be evaluated based on a rubric provided to the students.

## Repeatable

No

## Methods of Instruction

- Lecture/Discussion
- Distance Learning

Lecture:

1. The instructor will give a PowerPoint presentation on building components. During an onsite tour of a building under construction, the student will be able to identify construction components of the building that had been shown in the presentation.
2. The instructor will lecture on building collapse and students will complete a worksheet where they will identify drawings of the various types of building collapse.

Distance Learning

1. From the text on Fire Resistive Construction, the instructor will provide written lecture, pdf handouts of the various types of

construction, written assignment instruction, and an assignment worksheet. Each student will review the Module materials and complete the assignment worksheet identifying the correct construction materials based on the information given. Each student will post his/her worksheet on the Discussion Board, receive feedback from other students, and provide feedback to at least 2 other student postings. The instructor will review all student postings and provide feedback. (Objective 8)

2. In the Firefighting Concerns of Green Construction chapter, the instructor will provide written lecture, pdf handouts, PowerPoint presentation, and written assignment instruction. The assignment requires each student to outline using the concerns. Each student will post his/her work on the Discussion Board, receive feedback from other students, and provide feedback to at least 2 other student postings. The instructor will review all student postings and provide feedback.

## Typical Out of Class Assignments

### Reading Assignments

1. The student will read the section of the textbook pertaining to building loads and will produce a list of examples of each type of load.
2. The student will read the portion of the textbook concerning building construction classification and be prepared to discuss construction types in class and provide one example of each type of construction.

### Writing, Problem Solving or Performance

1. The student will build a scale model of a Type V, wood construction building at the framing stage. All structural members of the foundation, walls and roof will be labeled and identified.
2. Given a set of blue prints, determine the correct construction classification of a building.

### Other (Term projects, research papers, portfolios, etc.)

### Required Materials

- Brannigan's Building Construction for the Fire Service
  - Author: Francis L. Brannigan & Glenn P. Corbett
  - Publisher: Jones and Bartlett, Oklahoma State University
  - Publication Date: 2015
  - Text Edition: 5th
  - Classic Textbook?:
  - OER Link:
  - OER:
- Knowing Your Buildings: A Firefighters Reference Guide
  - Author: Schwinge
  - Publisher: DELMAR Cengage
  - Publication Date: 2010
  - Text Edition:
  - Classic Textbook?:
  - OER Link:
  - OER:

### Other materials and-or supplies required of students that contribute to the cost of the course.