# COURSE SYLLABUS

## Building Construction for Fire Protection

FST 105

[Semester]

CRN

3 Credits

### Instructor Information

Instructor Name: 
Instructor Email: 
Instructor Phone: 
Office Hours: 

### Class Meeting Dates/Location/Time:

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### Add/Drop Dates/Withdraw Dates

Add/Drop Date: 
Withdraw Date: 

[Other necessary information for students dropping or withdrawing from class]

### Co and Pre Requisites

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Course Description

Provides the components of building construction that relate to fire and life safety. The focus of this course is on firefighter safety. The elements of consideration and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies.

Course Competencies

1. Demonstrate an understanding of building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics.
2. Classify major types of building construction.
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 principle structural components of buildings and demonstrate an understanding of the functions of each.
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 and analyze the causes involved in the line of duty firefighter deaths related to structural and wildland firefighting and training and research the reduction of emergency risks and accidents.
10. Identify the role of GIS as it relates to building construction.

Topical Outline

I. Introduction
   A. History of Building Construction
   B. Governmental Functions, Building and Fire Codes
   C. Fire Risks and Fire Protection
   D. Fire Loss Management and Life Safety
   E. Pre-fire Planning and Fire Suppression Strategies

II. Principles of Construction
   A. Terminology and Definitions
   B. Building and Occupancy Classifications
   C. Characteristics of Building Materials
   D. Types and Characteristics of Fire Loads
E. Effects of Energy Conservation

III. Building Construction
   A. Structural Members
      1. Definitions, Descriptions and Carrying Capacities
      2. Effects of Loads
   B. Structural Design and Construction Methods
   C. System Failures

IV. Principles of Fire Resistance
   A. Standards of Construction
   B. Fire Intensity and Duration
   C. Theory vs. Reality

V. Fire Behavior vs. Building Construction
   A. Flame Spread
   B. Smoke and Fire Containment
      1. Construction and Suppression Systems
      2. HVAC Systems
      3. Rack Storage

VI. Wood Construction
   A. Definition and Elements of Construction
   B. Types of Construction
   C. Fire Stopping and Fire Retardants
   D. Modifications/Code Compliance

VII. Ordinary Construction
   A. Definitions and Elements of Construction
   B. Structural Stability and Fire Barriers
   C. Modifications/Code Compliance

VIII. Collapse

IX. Ventilation

X. Non-Combustible

XI. Steel Construction
   A. Definitions and Elements of Construction
   B. Structural Stability, Fire Resistance and Fire Protection of Elements
   C. Modifications/Code Compliance

XII. Concrete Construction
   A. Definitions and Elements of Construction
   B. Structural Stability and Fire Resistance
   C. Modifications/Code Compliance

XIII. High Rise Construction
   A. Early vs. Modern Construction
   B. Vertical and Horizontal Extension of Fire and Smoke
   C. Fire Protection and Suppression
   D. Elevators
E. Atriums/Lobbies
F. Modifications/Code Compliance

XIV. Collapse
XV. Ventilation

Required Reading Materials and Supplies

[Course/Instructor Specific]

Technology Requirements

This course requires some online participation via Online Aims (Desire 2 Learn). Availability to a computer with internet access is required to obtain course information, complete assignments, and communicate via your college email account. You will need to allow time for technical malfunctions in order to meet required due dates. If you are having problems with Aims Online, please contact the helpdesk at 970-339-6380.

You will be required to utilize the online material provided by your textbook publisher for some assignments.

Computers are available on campus for student use. Please consult with your instructor if you have questions.

Attendance Requirements

[Course/Instructor Specific]
Course Evaluations:

Course Evaluations provide valuable feedback to Instructors. Students are encouraged to complete the online course evaluation survey during the last two weeks of the course. Other short course evaluations will be available at various times, depending on the course start and end times. Students will receive an email message directing them to a website where they can login using their Aims ID and complete evaluations. Course evaluations are confidential.

Standard Syllabus Policies

The standard syllabus academic policies are located at the following website: http://www.aims.edu/inside/policies/standard-syllabus/