

**THE UNIVERSITY OF AKRON  
COLLEGE OF HEALTH & HUMAN SCIENCES  
FIRE PROTECTION TECHNOLOGY**

**Course Name:** Fire Safety Building Design and Construction  
**Course Number:** 2230:102  
**Course Credit:** 3 credit hours  
**Prerequisites:** none

**Course Description**

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

**Program Outcomes:**

Upon Completion of the course the student will:

- 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 relationship.
- 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 wild land firefighting, training and research and the reduction of emergency risks and accidents.

# Fire Safety Building Design and Construction

## **ASSESSMENT:**

At the beginning of the semester, the instructor will discuss the format used to evaluate student performance and progress. The criteria for assigning a course grade shall also be discussed. A hard copy and electronic copy of the course syllabus will be provided on Springboard. Assessment methods may include one or more of the following: research papers, book and journal article reviews, written and oral reports, table top exercises, community service projects, and classroom presentations.

## **Course Outline:**

- Topic 1 Concepts of Construction
- Topic 2 Methods and Materials of Construction, Renovation, and Demolition
- Topic 3 Building and Fire Codes
- Topic 4 Fire Behavior and Building Construction
- Topic 5 Wood Frame Construction
- Topic 6 Heavy Timber and Mill Construction
- Topic 7 Ordinary Construction
- Topic 8 Noncombustible Construction
- Topic 9 Fire Resistive Construction
- Topic 10 Firefighting Concerns of Green Construction

## **Grading Scale**

|           |                 |           |                |
|-----------|-----------------|-----------|----------------|
| <b>A</b>  | <b>97 – 100</b> | <b>C</b>  | <b>75 – 77</b> |
| <b>A-</b> | <b>94 - 96</b>  | <b>C-</b> | <b>72 – 74</b> |
| <b>B+</b> | <b>90 – 93</b>  | <b>D</b>  | <b>70 – 71</b> |
| <b>B</b>  | <b>86 – 89</b>  | <b>D-</b> | <b>69</b>      |
| <b>B-</b> | <b>82 – 85</b>  | <b>F</b>  | <b>68</b>      |
| <b>C+</b> | <b>78 – 81</b>  |           |                |