

FIRE 110 : BUILDING CONSTRUCTION FOR FIRE PERSONNEL

Transcript title

Bldg Const. for Fire Personnel

Credits

3

Grading mode

Standard letter grades

Total contact hours

30

Lecture hours

30

Recommended preparation

FIRE 114.

Course Description

Introduces the relationship of building construction to firefighter and life safety. Explores the elements of construction and design of structures, key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. This course is a FESHE core requirement and is equivalent to NFA C0275.

Course learning outcomes

1. The following learning outcomes are those of the National Fire Academy (NFA).
2. Identify various classifications of building construction.
3. Explain theoretical concepts of how fire impacts major types of building construction.
4. Describe building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, firefighting strategy, and tactics.

Content outline

1. Introduction
 - a. History of Building Construction
 - b. Government 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
2. Principles of Construction
 - a. Terminology and Definitions
 - b. Building and Occupancy Classifications
 - c. Characteristics of Building Materials
 - d. Types of Characteristics of Fire Loads
 - e. Effects of Energy Conservation
3. Building Construction
 - a. Structural Members
 - i. Definitions, Descriptions and Carrying Capacities
 - ii. Effects of Loads

- b. Structural Design and Construction Methods
 - c. System Failures
4. Principles of Fire Resistance
 - a. Standards of Construction
 - b. Fire Intensity and Duration
 - c. Theory versus Reality
 5. Fire Behavior versus Building Construction
 - a. Flame Spread
 - b. Smoke and Fire Containment
 - i. Construction and Suppression Systems
 - ii. HVAC Systems
 - iii. Rack Storage
 - c. Combustible
 6. Wood Construction
 - a. Definition and Elements of Construction
 - b. Types of Construction
 - c. Fire Stopping and Fire Retardants
 - d. Modification/Code Compliance
 7. Ordinary Construction
 - a. Definitions and Elements of Construction
 - b. Structural Stability and Fire Barriers
 - c. Modifications/Code Compliance
 8. Collapse
 9. Ventilation
 10. Non-Combustible
 11. Steel Construction
 - a. Definitions and Elements of Construction
 - b. Structural Stability, Fire Resistance and Fire Protection of Elements
 - c. Modification/Code Compliance
 12. Concrete Construction
 - a. Definitions and Elements of Construction
 - b. Structural Stability and Fire Resistance
 - c. Modification/Code Compliance
 13. High Rise Construction
 - a. Early versus 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
 14. Collapse
 15. Ventilation

Required materials

This course will require purchase of a textbook.