

COURSE OUTLINE
Building Construction

SECTION I

SUBJECT AREA AND COURSE NUMBER: Fire Technology – FTA 116

COURSE TITLE: Building Construction

COURSE CATALOG DESCRIPTION: This course presents a detailed study of the many risks presented to structural firefighters working in the build environment and the fire behavior characteristics of various materials, fabrication techniques, and building assemblies. Fire protection schemes used in various buildings will be presented with emphasis on the special hazards presented by lightweight construction assemblies.

LECTURE HOURS PER WEEK: 3 **CREDIT HOURS:** 3

LAB HOURS PER WEEK: 0

PREREQUISITES: FTA 112 or permission of the instructor

SECTION II

- A. **SCOPE:** 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 at emergencies.
- B. **REQUIRED WORK:** Students will be expected to complete all assigned readings and homework and submit all written work on time.
- C. **ATTENDANCE AND PARTICIPATION:** Regular attendance and class participation are expected,
- D. **METHODS OF INSTRUCTION:** The methods of instruction are determined by each instructor and may include but are not limited to lecture/discussion, small group tasks, collaborative learning, experimental/exploration, distance learning, student presentations, or use of technologies such as audio-visual materials, computers, and internet.

E. OBJECTIVES, OUTCOMES, AND ASSESSMENT: The following objectives and outcomes represent the department's core requirements for student achievement:

LEARNING OBJECTIVES	LEARNING OUTCOMES	ASSESSMENT METHODS
To demonstrate an understanding of:	Student will:	As measured by:
1. The student's role in the learning process	a) Attend regularly, on time and stay for entire class period; b) Complete assignments and contribute positively to the class	Attendance records Class records
2. National Fire Protection Agency (NFPA) Standard 220	Describe fire classes (and subclasses) of buildings and properly classify buildings	Class exercises and exam
3. Indicators of Potential structural failure as they relate to firefighter safety	Explain characteristics and hazards of wood frame construction, steel frame construction, concrete construction, and high-rise construction	Homework and exams
4. The principles of fire resistance	Explain techniques of fire resistance in construction. Explain problems with fire resistance schemes	Class discussion, exercises, and exams.
5. The firefighting dynamics of a structure fire	Explain smoke travel dynamics, fire growth factors, and flame spread characteristics	Homework and exams.
6. The hazards associated with the "build environment"	Explain the hazards of truss construction; Explain the characteristics of mixed construction; Explain the stresses and forces acting on buildings	Homework and exams

F. TEXTS AND MATERIALS: As selected by instructor.

G. INFORMATION TECHNOLOGY: As determined by instructor.