Western Technical College

10503143 Building Construction for Fire Protect

Course Outcome Summary

Course Information

Description	Provides the components of building construction that relate to fire and life safety.
Career Cluster	Law, Public Safety, Corrections and Security
Instructional Level	Associate Degree Courses
Total Credits	3
Total Hours	54

Pre/Corequisites

Prerequisite None

Textbooks

Building Construction Related to the Fire Service. 4th Edition. Copyright 2016. International Fire Service Training Association. Publisher: Fire Protection Publications/IFSTA. **ISBN-13:** 978-0-87939-594.0. Required.

Learner Supplies

Polo shirt with logo, black pants, black ankle supporting shoes/boots. **Vendor:** To be discussed in class. Required.

Success Abilities

1. Cultivate Passion: Enhance Personal Connections
2. Live Responsibly: Embrace Sustainability
3. Refine Professionalism: Improve Critical Thinking

4. Refine Professionalism: Participate Collaboratively
5. Refine Professionalism: Practice Effective Communication

Course Competencies

1. Identify various classifications of building construction.

Assessment Strategies

1.1. Written Objective Test

Learning Objectives

1.a. Identify building construction types.
1.b. Define the terms associated with building types.
1.c. Perform more complete size-up reports regarding building types.

2. Explain the theoretical concepts of how fire impacts major types of building construction.

Assessment Strategies

2.1. Written Objective Test

Criteria

2.1. Score a minimum of 70%.
2.2. Complete exam within 90 minutes.
2.3. Complete exam without using any reference books or notes.
2.4. Complete exam at prescribed time and place.

Learning Objectives

2.a. Summerize the building systems contained in residential and commercial structures.
2.b. Predict the effects of fire on Type I construction.
2.c. Predict the effects of fire on Type II construction.
2.d. Predict the effects of fire on Type III construction.
2.e. Predict the effects of fire on Type IV construction.
2.f. Predict the effects of fire on Type V construction.

3. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.

Assessment Strategies

3.1. Written Objective Test

Criteria

3.1. Score a minimum of 70%.
3.2. Complete exam within 90 minutes.
3.3. Complete exam without using any reference books or notes.
3.4. Complete exam at prescribed time and place.

Learning Objectives

3.a. Understand the terms used in basic blueprint reading.
3.b. Recognize the different parts of a plan.
3.c. Define key terms contained in all plans.
3.d. Understand how codes are developed and the political processes involved.

4. Classify major types of building construction in accordance with a local/model building code.

Assessment Strategies

4.1. Written Objective Test

Criteria

4.1. Score a minimum of 70%.
4.2. Complete exam within 90 minutes.
4.3. Complete exam without using any reference books or notes.
4.4. Complete exam at prescribed time and place.

Learning Objectives

4.a. Identify building types by visual size-up.
4.b. Describe the characteristics of balloon-frame construction.
4.c. Describe the characteristics of platform-frame construction.
4.d. Describe the purpose of a foundation in a structure.
4.e. Explain how floor construction affects fire suppression operations.
4.f. List the three primary types of roofs.

5. Analyze the hazards and tactical considerations associated with the various types of building construction.

Assessment Strategies

5.1. Written Objective Test

Criteria

5.1. Score a minimum of 70%.
5.2. Complete exam within 90 minutes.
5.3. Complete exam without using any reference books or notes.
5.4. Complete exam at prescribed time and place.

Learning Objectives

5.a. Deduce how building components will assist or deter rapid intervention.
5.b. Investigate how to properly mitigate problems using the building systems.
5.c. Understand the mechanisms of collapse.
5.d. Predict potential collapse situations.
5.e. Summarize the various types of collapse.

6. Explain the different loads and stresses that are placed on a building and their interrelationships.

Assessment Strategies

6.1. Written Objective Test

Criteria

6.1. Score a minimum of 70%.
6.2. Complete exam within 90 minutes.
6.3. Complete exam without using any reference books or notes.
6.4. Complete exam at prescribed time and place.

Learning Objectives

6.a. Interpret the significance of loads on a structure.
6.b. Correlate key loads and how they affect structural integrity.
6.c. Assess the relevance of identifying how structural members are located in the building.

7. Identify the function of each principle structural component in typical building design.

Assessment Strategies

7.1. Written Objective Test

Criteria

7.1. Score a minimum of 70%.
7.2. Complete exam within 90 minutes.
7.3. Complete exam without using any reference books or notes.
7.4. Complete exam at prescribed time and place.

Learning Objectives

7.a. Explain the properties of the main materials used in construction.
7.b. Analyze the processes used to manufacture these materials.
7.c. Identify key building components and their role in the structure.
7.d. Correlate key terms associated with a building’s construction.
7.e. Identify all of the major components of a truss.
7.f. Identify truss construction.
7.g. Understand the forces acting upon trusses and their dangers.

8. Differentiate between fire resistance and flame spread

Assessment Strategies

8.1. Written Objective Test

Criteria

8.1. Score a minimum of 70%.
8.2. Complete exam within 90 minutes.
8.3. Complete exam without using any reference books or notes.
8.4. Complete exam at prescribed time and place.

Learning Objectives

8.a. Explain the characteristics of fire-resistive floors.
8.b. Explain the effect that interior finishes have on fire suppression operations.
8.c. Identify Fire Resistant construction materials.

9. Describe the testing procedures used to establish ratings for fire resistance and flame spread

Assessment Strategies

9.1. Written Objective Test

Criteria

9.1. Score a minimum of 70%.
9.2. Complete exam within 90 minutes.
9.3. Complete exam without using any reference books or notes.
9.4. Complete exam at prescribed time and place.

Learning Objectives

9.a. Describe the processes used to test some building materials.
9.b. Understand the various testing organizations.
9.c. Explain why some building materials are tested.
9.d. Explain why testing of building components is important to firefighter safety.

10. Classify occupancy designations of the building code.

Assessment Strategies

10.1. Written Objective Test

Criteria

10.1. Score a minimum of 70%.
10.2. Complete exam within 90 minutes.
10.3. Complete exam without using any reference books or notes.
10.4. Complete exam at prescribed time and place.

Learning Objectives

10.a. List common occupancy designations.
10.b. Explain some of the differences in construction based on occupancy.
10.c. Describe why occupancies are classified differently.
10.d. Explain change of occupancy and how it effects fire fighter safety.

11. Identify the indicators of potential structural failure as they relate to firefighter safety.

Assessment Strategies

11.1. Written Objective Test

Criteria

11.1. Score a minimum of 70%.
11.2. Complete exam within 90 minutes.
11.3. Complete exam without using any reference books or notes.
11.4. Complete exam at prescribed time and place.

Learning Objectives

11.a. Understand the concept of performing size-up.
11.b. Investigate decisions regarding entry into structures.
11.c. Calculate what resources will be needed for a safe and effective attack.
11.d. Point out the many aspects of operations at collapses.
11.e. Identify hazards and conditions associated with a structural collapse.

12. Identify the role of GIS as it relates to building construction.

Assessment Strategies

12.1. Written Objective Test
12.2. Skill Demonstration

Criteria

12.1. Score a minimum of 70%.
12.2. Complete exam within 90 minutes.
12.3. Complete exam without using any reference books or notes.
12.4. Complete exam at prescribed time and place.
12.5. Locate a GIS system applicable to an assigned facility.
12.6. Explore GIS information.
12.7. Explain what information was found on the GIS system.

Learning Objectives

12.a. Explain what GIS is.
12.b. Describe ways that GIS can be used.
12.c. Know how to locate GIS information for an occupancy.