



Course Instructions

NOTE: The following two pages contain a preview of the final exam. This final exam is identical to the final exam that you will take online after you purchase the course.

After you purchase the course online, you will be taken to a receipt page online which will have the following link: [Click Here to Take Online Exam](#). You will then click on **this link to take the final exam**.

3 Easy Steps to Complete the Course:

- 1.) Read the Course PDF – download from our website
- 2.) Purchase the Course Online & Take the Final Exam – see note above
- 3.) Print Out Your Certificate

FINAL EXAM - Design of Commercial Buildings to Mitigate Terrorist Attacks

1. **The *purpose* of this primer is to introduce concepts that can help building designers, owners, and state and local governments mitigate the threat of hazards resulting from terrorist attacks on new buildings.**
 - a. True
 - b. False
2. **Regarding *explosive attacks*, from the standpoint of structural design, the _____ is the most important consideration.**
 - a. hand grenade
 - b. concealed weapon
 - c. suicide bomber
 - d. vehicle bomb
3. **In terms of *damage mechanisms*, damage due to the air-blast shock wave may be divided into concurrent air-blast effects and direct air-blast effects.**
 - a. True
 - b. False
4. **In terms of the *goals of the design approach*:**
 - a. Civilian structures are usually designed to remain undamaged from a large explosion.
 - b. It is impractical to design a civilian structure to remain undamaged from a large explosion.
 - c. It is inexpensive to design a civilian structure to remain undamaged from a large explosion.
 - d. It is preferred to design a civilian structure to remain undamaged from a large explosion.
5. **When determining the *site location and layout*, one of the most effective means of protecting assets is to:**
 - a. Increase the distance between a potential bomb and the assets to be protected.
 - b. Structurally contain the explosive device and the shock wave.
 - c. Equalize the air blast pressure differential
 - d. Decrease the distance between a potential bomb and the assets to be protected.
6. **With regards to *site location and layout*, and the *effectiveness of anti-ram barriers*, the vehicle weight used for the design of barriers typically ranges from:**
 - a. 2,500 lb. for cars up to 10,000 lb. for trucks.
 - b. 4,000 lb. to 7500 lb. for cars.
 - c. 4,000 lb. for cars up to 15,000 lb. for trucks.
 - d. 10,000 lb. to 15,000 lb. for trucks.
7. **Three ways to approach the *structural design of buildings to mitigate damage due to progressive collapse*:**
 - a. Direct Method, Deflection Method, Specific Local-Resistance Method.
 - b. Indirect Method, Alternate-Load-Path Method, Surface Ablative Method.
 - c. Direct Method, Alternate-Load-Path Method, Surface Ablative Method.
 - d. Indirect Method, Alternate-Load-Path Method, Specific Local-Resistance Method.
8. **With regards to the *building envelope and exterior wall/cladding design*, the exterior walls provide the first line of defense against the intrusion of the air-blast pressure and hazardous debris into the building.**
 - a. True
 - b. False

9. **For *multi-family residential occupancy*, multi-family residential buildings are unique because they:**
- a. have more rated walls than do institutional and industrial buildings.
 - b. tend to house more elderly, handicapped, and children than do office buildings, which tend to have more able-bodied occupants.
 - c. are more likely to be of wood frame construction than office buildings.
 - d. are less likely to be a target.
10. **Regarding *cost considerations* and *initial costs*, the initial construction cost of protection has two components:**
- a. fixed and variable.
 - b. depreciated and accelerated.
 - c. fixed and leveraged.
 - d. depreciated and leveraged.