

Blast Resistant Structural Design Training Seminar Information

Course title: Blast Resistant Structural Design (Blast)
There is no Course Number.
This is not a Corps of Engineers PROSPECT class.

Course Dates/Times: Monday, 14 April – Friday, 18 April 2025 0800-1700

Location: Edward Zorinsky Federal Building, 1616 Capitol Avenue,
Omaha, NE 68102

Cost: \$2000.00 per student

Payment deadline: Tuesday, 1 April 2025

This class is designed for Structural Engineers. Only Structural Engineers will be allowed to take this class.

Applications will be accepted after the payment deadline, but applicants may be placed on a waitlist.

- **DO NOT SEND PAYMENT WITH THE APPLICATION.** Attendees are placed in the course "first come/first serve" based on the received date of their completed application form. If an attendee is deploying, please notify the course registrar. Deploying attendees will be placed on the roster, pending payment. Incomplete, illegible forms, using the wrong application form, or submitting application to another email may result in registration delay. Previous versions of the application form will not be accepted. Application forms must be submitted for each attendee. Multiple names on one application will not be accepted. The application will be processed based on the date received.
- DoD/Federal Contractors are welcome to register for the course. The attendee(s) must be working on a current DoD/Federal contract. The contract must be verified via an email sent by a DoD/Federal customer. A form is available to send to the DoD/Federal customer. Please contact the course registrar. Attendees will not be registered until the contract is verified.
- Accepted forms of payment: Credit Card, MIPR/Government Order, DoD/Federal Government "convenience" Check, Cashier's Check, or Money Order.

****PLEASE NOTE: NON-USACE APPLICANTS, PAYING WITH A MIPR, MUST HAVE AN INTER-AGENCY AGREEMENT (DD-1144 or 7600A) IN-PLACE WITH USACE-OMAHA.**

- It is the attendee's responsibility to ensure payment information is provided to their correct financial personnel, as well as to follow up on payment. We are not a training facility. Once payment has been received, the attendee will receive a confirmation email.

This course is exportable in a Mobile Training Team (MTT) format. Contact Ann Mittelsdorf, Course Coordinator, at 402-995-2930 or email ann.m.mittelsdorf@usace.army.mil for more information or for a cost estimate to bring the course directly to your facility.

PROTECTIVE DESIGN CENTER
BLAST RESISTANT STRUCTURAL DESIGN TRAINING COURSE

- 1) The U.S. Army Corps of Engineers Protective Design Center (PDC) offers this course to acquaint practicing structural engineers with well-established design and analysis procedures used by DoD to evaluate facilities that are subjected to the effects of an explosion.
- 2) Students will have an opportunity to see how the class work is directly applicable to their job and profession.
- 3) Design procedures presented allow engineers to assess the explosion effects and response of building components when exposed to explosive threats at various standoff distances. This course is well suited for the practicing senior structural engineer who needs to develop their skills to analyze and design structural elements for dynamic loads. Structural engineers will become familiar with the terminology and methodologies used to design a structural element or review an AE's blast resistant design. During the class we will discuss typical protective measures used in blast environments.
- 4) Design procedures and response limits follow those used in UFC 3-340-02, *Structures to Resist the Effects of Accidental Explosions* and UFC 3-340-01, *Design and Analysis of Hardened Structures to Conventional Weapons Effects*. The Protective Design Center (PDC) has developed a set of response limits for the ATRFP review of facilities, and we will review the response limits used in industry such as the ASCE *Design of Blast Resistant Buildings in Petrochemical Facilities* and ASCE 59-11 *Blast Protection of Buildings*.
- 5) The course content is based on the use of the SBEDS software package developed by the PDC. This is a general-purpose analysis and design tool that assists the structural engineer in assessing dynamic loads on structures. It uses drop-down menus for the input of member properties, blast loads, and response limits, and the output is both graphical and print files. All input and output files can be saved in project folders.
- 6) Course topics include the use of SDOF (single-degree-of freedom) models; Blast Loads on Structures; Dynamic Material Properties; Principles of Structural Dynamics; Allowable Response Criteria; Design of Steel; Reinforced Concrete; and Masonry Structures.
- 7) The course runs four and one-half days and includes both lecture and hands-on use of the SBEDS analysis program. Typical analysis and design example problems are presented, and students will develop solutions to those problems and follow up with class discussion of the solution.