



Advanced Structural Collapse 3

TNG-25S

Program of Instruction

Updated: August 2009



Texas Engineering Extension Service
Urban Search and Rescue

TEEX is a member of the
National Domestic Preparedness Consortium

Course Details

Course Length: Five days long, ten training hours each day (50 total training hours). Class is from 0700 to 1800 each day.

Delivery Location: Delivered in [Disaster City®](#), TX – within the city limits of College Station, TX or equivalent training facility.

GSA and Grant Funding Approval:

The Advanced Structural Collapse 3 course is listed on GSA Schedule 84. TEEX has special registration requirements for GSA participants. Please contact the TEEX US&R Division to register for a GSA-approved course. For more information on ordering from Federal Supply Schedules, please visit: www.gsa.gov



Certificate: TEEX certificate of completion

Prerequisites: Prior to attending this course, participants must:

- Complete a [Structural Collapse Technician](#) (TNG23T) course or equivalent

Due to the strenuous nature of search and rescue activities, participants should secure a professional evaluation of their physical condition prior to enrolling in these courses.

Target Audience:

This course has been developed for city, state and federal urban search and responders. The target audience also includes all emergency responders from municipal and industrial agencies tasked with structural collapse duties who are seeking to expand their current shoring skills and develop advanced techniques. Course participants include emergency responders from the following five disciplines/services:

- Fire Service (FS)
- Law Enforcement (LE)
- Military (MT)
- Emergency Medical Services (EMS)
- Industrial Customers (IND)

Mission Area: Respond

Level of Training: Performance – Offensive

Required Equipment:

This course requires students to bring with them specific equipment. The course participants should arrive with the following items:

- Helmet (must be ANSI rated Z89.1 – Type 1)
- Steel toe safety boots (must be ANSI Z41 PT99 M1/75 C/75)
- Eye protection (must be ANSI Z-87.1)
- Work gloves and knee pads
- Standard work/duty clothing including long sleeve shirts for every day of class
- Raingear suitable for search and rescue operations. Class is conducted rain or shine

NOTE: N-95 dust masks and ear plugs will be provided by TEEX

Course Overview

Course Background

The standard TEEEX Structural Collapse Technician 2 books and the U.S. Army Corps of Engineers [Shoring Operations Guide](#) (SOG) contain significant additional information and techniques that can not be covered during a standard 80 hour structural collapse course. This course was designed to provide classroom and field time to practice and learn those advanced external shoring techniques not covered in the standard 80 hour course.

Course Description

This course is designed to provide emergency services personnel the knowledge, skills, and abilities necessary to perform advanced shoring skills in a structural collapse environment. Participants will review standard shoring concepts and construct shores using wood and pneumatic shoring systems. After the review, participants will expand their knowledge of wood shores by constructing both split sole and solid sole multiple insertion point rakers. Participants are provided hands-on, task-oriented practical exercises to reinforce classroom instruction.

Course Purpose

The purpose of the Advanced Structural Collapse 3 course is to provide structural collapse technicians with the necessary advanced knowledge, skills and abilities to perform advanced exterior shoring operations at structural collapse incidents. First responders completing this course will be prepared to work as a leader of a shoring team to respond to rescue situations involving structural collapses.

Course Format

Classes will begin at 7:00 a.m. each day. Participants should plan travel to arrive the night before classes begin. For the purpose of making hotel arrangements, participants could make reservations in the cities of Bryan, TX or College Station, TX. Course delivery consists of didactic instruction, participant activities, and hands-on task-oriented practical exercises. Course delivery consists of 15 percent didactic classroom presentations and lectures, and 85 percent hands-on and task-oriented practical training in both the Technical Skills Training Area (TSTA) and Disaster City®.

Students can attend the Advanced Structural Collapse 3 course in two formats:

1. Open enrollment classes – TEEEX offers the course on fixed dates approximately three times per. Any student meeting the prerequisites may enroll in the course online. This course typically has a broad cross section of responders and offers an excellent ability for lessons learned from other departments.
2. Contract classes – TEEEX can provide this course exclusively for a jurisdiction or region. These courses must have a minimum of 10 and can have a maximum of 24 participants. When conducting contract classes, TEEEX can add curriculum to meet specific requirements of the sponsoring jurisdiction.

Course Scope

The scope of this course addresses priorities and capabilities that Department of Homeland Security is encouraging state and local jurisdictions to establish. This course assists with establishing priorities for the National Planning Scenarios¹, the National Preparedness Guidelines², the Target Capabilities List³, and the Universal Task List⁴.

National Planning Scenarios

The National Planning Scenarios¹ are a reference to help federal, state, local, and tribal entities at all levels of government evaluate and improve their capabilities to perform their assigned missions and tasks in major events. This course gives a state/region the capability to conduct wide area search operations in twelve out of the fifteen National Planning Scenarios¹:

- Scenario 1: Nuclear Detonation – 10-Kiloton Improvised Nuclear Device
- Scenario 2: Biological Attack – Aerosol Anthrax
- Scenario 3: Biological Disease Outbreak – Pandemic Influenza
- Scenario 4: Biological Attack – Plague
- Scenario 5: Chemical Attack – Blister Agent
- Scenario 6: Chemical Attack – Toxic Industrial Chemicals
- Scenario 7: Chemical Attack – Nerve Agent
- Scenario 8: Chemical Attack – Chlorine Tank Explosion
- Scenario 9: Natural Disaster – Major Earthquake
- Scenario 10: Natural Disaster – Major Hurricane
- Scenario 11: Radiological Attack – Radiological Dispersal Devices
- Scenario 12: Explosives Attack – Bombing Using Improvised Explosive Devices

National Preparedness Guidelines

The National Preparedness Guidelines² defines what it means for the Nation to be prepared for all hazards. There are four critical elements of the *Guidelines*:

- (1) The ***National Preparedness Vision***, which provides a concise statement of the core preparedness goal for the Nation.
- (2) The ***National Planning Scenarios***¹, which depict a diverse set of high consequence threat scenarios of both potential terrorist attacks and natural disasters. Collectively, the 15 scenarios are designed to focus contingency planning for homeland security preparedness work at all levels of government and with private sector. The scenarios form the basis for national planning, training, exercises, and grant investments needed to prepare for emergencies of all types.
- (3) The ***Target Capabilities List***³ (***TCL***), which defines 37 specific capabilities that communities, the private sector, and all levels of government should collectively possess in order to respond effectively to disasters.
- (4) The ***Universal Task List***⁴ (***UTL***), which is a menu of some 1,600 unique tasks that can facilitate efforts to prevent, protect against, respond to, and recover from the major events that are represented by the National Planning Scenarios. It presents a common vocabulary and identifies key tasks that support development of essential capabilities among organizations at all levels.

Course Scope (continued)

The *Guidelines* establish a capabilities-based approach to preparedness. Simply put, a capability provides the means to accomplish a mission. The *Guidelines* address preparedness for all homeland security mission areas: prevention, protection, response, and recovery. A capability consists of the combination of elements required to deliver the desired outcome.

TEEX US&R courses primarily deal with the Search and Rescue (Land-Based) capabilities found within the Respond Mission Area and the outcome is: The greatest number of victims (human and, to the extent that no human remain endangered, animal) are rescued and transferred to medical or mass care capabilities, in the shortest amount of time, while maintaining rescuer safety.

In order to support a consistent nationwide approach to implementation, the Guidelines establish three capabilities-based preparedness tools and a National Preparedness System. To help correctly balance the potential threat of major events with the requisite resources to prevent, respond to, and recover from them, the *Guidelines* also includes seven national priorities. The priorities fall into two categories: overarching priorities that contribute to development of multiple capabilities, and capability-specific priorities that build selected capabilities from the TCL for which the Nation has the greatest need. **Priorities that apply to this course are highlighted in red.** The overarching priorities are:

- 4.1 Expand Regional Collaboration
- 4.2 Implement the NIMS⁶ & the National Response Framework⁵
- 4.3 Implement the National Infrastructure Protection Plan

Additionally, the National Preparedness Guidelines² has four capability specific priorities:

- 4.4 Strengthen Information Sharing and Collaboration Capabilities
- 4.5 Strengthen Interoperable and Operable Communications Capabilities
- 4.6 **Strengthen CBRNE Detection, Response, and Decontamination Capabilities – *this course specifically addresses this National Preparedness Goal priority***
- 4.7 Strengthen Medical Surge and Mass Prophylaxis Capabilities

Course Scope (continued)

Target Capabilities List

The September 2007 version of the Target Capabilities List³ (TCL) provides guidance on the specific capabilities and levels of capability that Federal, State, local, and tribal entities will be expected to develop and maintain. The TCL is designed to assist jurisdictions and agencies in understanding and defining their respective roles in a major event, the capabilities required to perform a specific set of tasks, and where to obtain additional resources if needed. The TCL is considered a “living” document that will continue to be refined over time. The TCL identifies 37 essential capabilities. The applicable tables of the Response Mission: Search and Rescue (Land-Based) – Target Capabilities (page 407 thru 419 of the September 2007 TCL) that deal with Search and Rescue are included below. **Personnel having completed the Advanced Structural Collapse 3 course give jurisdictions the capabilities that are highlighted in red.**

Capability Definition

Search & Rescue (Land-Based) is the capability to coordinate and conduct search and rescue (SAR) response efforts for all hazards, including searching affected areas for victims (human and, to the extent that no humans remain endangered, animal) and locating, accessing, medically stabilizing, and extricating victims from the damaged area.

Outcome

The greatest number of victims (human, and to the extent that no humans remain endangered, animal) and rescued and transferred to medical or mass care capabilities, in the shortest amount of time, while maintaining rescuer safety.

Performance Measures and Metrics and Critical Tasks

Activity: Direct Search & Rescue Tactical Operations	
Definition: In response to notification of entrapment, provide management and coordination of SAR capability, through demobilization for single or multiple teams	
Critical Tasks	
Res.B4a 3.1	Receive and accept SAR request/activation order
Res.B4a 3.2	Participate in SAR planning process and operational briefings
Res.B4a 3	Plan and coordinate SAR operations at incident site
Res.B4a 3.4.1	Direct SAR resources according to the National Incident Management System (NIMS), the Incident Command System (ICS), and consensus-level technical rescue standards
Res.B4a 3.4.3	Determine need for deployment of additional SAR assets
Res.B4a 3.6.1	Provide timely situational awareness and response information
Res.B4a 3.6.1.1	Establish and maintain a chronological log of events in the field
Res.B4a 3.6.2	Document and collect SAR operations information, including chronological log of events in the field for use in after action review
Res.B4a 3.7.3	Re-assign/rotate technical specialists, as needed
Res.B4a 3.3.3	Maintain accountability of all SAR personnel
Res.B4a 3.2.1	Identify logistics capability of incident site to determine whether deployed SAR teams must be self-sustaining
Res.B4a 3.7	Develop SAR team reassignment/demobilization plan

Course Scope (continued)

Target Capabilities List (continued)

Activity: *Activate Search & Rescue*

Definition: In response to notification, mobilize and arrive at the incident scene to begin operations

Critical Tasks

Res.B4a 3.1	Receive and accept SAR request/activation order
Res.B4a 4.3	Participate in Search and Rescue (SAR) planning process and operational briefings
Res.B4a 4.2	Initiate mobilization procedure
Res.B4a 4.2.1	Assemble personnel and equipment at designated location
Res.B4a 4.2.2	Deploy Federal, State, regional or local SAR resources commensurate with request
Res.B4a 4.2.2	Transport team (personnel and equipment) to incident scene
Res.B4a 4.2.3	Collect and analyze incident information to assist SAR capability deployment decisions

Activity: *Provide Materiel and Other Support*

Definition: Upon arriving on scene, provide, track, and maintain equipment and supplies as well as support base of operations

Critical Tasks

Res.B4a 4.3	Participate in Search and Rescue (SAR) planning process and operational briefings
Res.B4a 5.1	Establish base of operations
Res.B4a 5.2	Maintain accountability of team equipment/supplies
Res.B4a 5.1.1	Provide medical care for SAR personnel, including the K-9 first responders

Activity: *Conduct Search and Rescue Reconnaissance*

Definition: Once on scene and equipped, provide rapid assessment of assigned SAR work areas and recommend search priorities/tactics to management.

Critical Tasks

Res.B4a 6.1.1	Assess incident site to determine search and rescue course of action
Res.B4a 6.1.2	Assess the incident site for hazardous materials (hazmat) and other environmental conditions
Res.B4a 6.1.3	Develop map of search area to be used in SAR tactical operations
Res.B4a 6.3	Communicate findings and recommend priorities to Team Management

Activity: *Search*

Definition: Upon being assigned search area, begins search operations.

Critical Tasks

Res.B4a 4.3	Participate in SAR planning process and operational briefings
Res.B4a 7.1	Ensure scene/site safety (security, shoring, debris)
Res.B4a 7.2	Conduct area search for victims
Res.B4a 7.2.1	Search for victims using canine, physical, and electronic search capabilities
Res.B4a 7.2.2	Identify and record potential/actual victim locations (live and dead)
Res.B4a 7.3	Direct ambulatory victims to safe assembly point
Res.B4a 7.4	Report progress of search efforts on a regular basis to SAR lead
Res.B4a 7.5	Maintain accountability for search personnel, equipment, and supplies

Course Scope (continued)

Target Capabilities List (continued)

Activity: *Extricate*

Definition: Upon notification of location of victim, perform extrication.

Critical Tasks

Res.B4a 4.3	Participate in SAR planning process and operational briefings
Res.B4a 7.1	Ensure scene/site safety (security, shoring, debris)
Res.B4a 8.1.1	Coordinate extrication strategy with medical personnel
Res.B4a 8.1	Extricate trapped victims
Res.B4a 8.2	Provide periodic progress reports while rescuing
Res.B4a 8.3	Maintain accountability of extrication personnel, equipment, and supplies

Activity: *Provide Medical Treatment*

Definition: Upon access to victim, coordinate with medical personnel to treat and transfer victim to more definitive medical care.

Critical Tasks

Res.B4a 4.3	Participate in US&R planning process and operational briefings
Res.B4a 9.1.1	Coordinate medical treatment with extrication and medical personnel
Res.B4a 9.2	Transfer victims to more definitive medical care
Res.B4a 9.1.2	Medically stabilize trapped victims according to Task Force Operations Manual and Medical Protocols
Res.B4a 9.1.2.1	Ensure victims are medically stabilized according to Task Force Operations Manual and Medical Protocols throughout packaging and extrication
Res.B4a 9.3	Maintain accountability of medical personnel, equipment, and supplies

Activity: *Demobilize/Redeploy*

Definition: Upon completion of assigned mission, disengage from incident site, and debrief personnel

Critical Tasks

Res.B4a 10.2.1	Repackage equipment cache
Res.B4a 10.2	Demobilize base of operations
Res.B4a 10.1.1	Arrange transportation for personnel and equipment
Res.B4a 10.1.2	Debrief SAR capability personnel

Course Scope (continued)

Universal Task List

The Universal Task List⁴ (UTL) is a useful planning reference: a comprehensive menu of tasks that may be performed in major events illustrated by the National Planning Scenarios¹. The UTL describes “what” tasks need to be performed. Federal, state, local and tribal entities reserve the flexibility to determine “who” needs to perform them and “how” to perform them. While no single jurisdiction or agency is expected to be able to perform all the tasks, it is expected that tasks will be chosen based on specific roles, missions, and functions. The UTL should be used by entities at all levels of government as a reference to help them plan, organize, equip, train, exercise, and evaluate personnel from the critical tasks that they may need to perform in major events that could occur across town or across the Nation. The UTL is considered a “living” document that will continue to be refined over time. The applicable tables of the UTL (pages 82 thru 83 of the Version 2.1 issued May 23, 2005) that deal with Search and Rescue are included below. **Jurisdictions with personnel that have completed the Advanced Structural Collapse 3 course will have the capacity to perform the following tasks outlined in red:**

Function ID	Sequence Number	Task
Res.B.4	1	Develop plans, procedures, and protocols to prepare for urban search and rescue operations
Res.B.4	1.1	Develop policies and procedures for urban search and rescue
Res.B.4	1.2	Establish, maintain, and manage the national urban search and rescue response system
Res.B.4	1.3	Ensure appropriate legal issues pertaining to liability claims, including the application of the good Samaritan laws, are understood and resolved
Res.B.4	1.4	Establish plans, procedures and protocols for logistical support for urban search and rescue assets
Res.B.4	2	Develop and conduct exercises and training for search and rescue
Res.B.4	2.1	Develop urban search and rescue training programs
Res.B.4	2.2	Provide training for urban search and rescue augmenting organizations
Res.B.4	3	Coordinate urban search and rescue response
Res.B.4	3.1	Provide resource & technical support
Res.B.4	3.1.1	Manage urban search and rescue mutual aid agreements
Res.B.4	3.1.2	Provide technical assistance, training, and operational support to urban search and rescue teams and assets
Res.B.4	3.1.2.1	Provide portable shelters for use by urban search and rescue task force
Res.B.4	3.1.2.2	Provide mobile feeding units for urban search and rescue task force
Res.B.4	3.1.3	Identify need for additional assistance
Res.B.4	4	Conduct Search and Rescue
Res.B.4	4.1	Assess situation and needs
Res.B.4	4.2	Assess incident site to determine search and rescue course of action
Res.B.4	4.2.1	Collect assessment information from damage assessment teams for inclusion in situation reports and for decision-making regarding US&R resources
Res.B.4	4.2.2	Issue additional advisories and alert and activation orders as required
Res.B.4	4.2.3	Determine need for deployment of additional US&R assets
Res.B.4	4.3	Conduct urban search and rescue operations
Res.B.4	4.3.1	Activate urban search and rescue support (US&R)
Res.B.4	4.3.1.1	Activate the national urban search and rescue response system for any incident of national significance

Course Scope (continued)

Universal Task List (continued)

Function ID	Sequence Number	Task
Res.B.4	4.3.2	Deploy urban search and rescue task forces or teams
Res.B.4	4.3.3	Evaluate the disaster site for hazardous materials
Res.B.4	4.3.3.1	Identify heavy machinery support requirements
Res.B.4	4.3.4	Direct search and rescue teams and collapse-site teams
Res.B.4	4.3.5	Search and extract victims from site
Res.B.4	4.3.5.1	Direct the use of heavy machinery in recovery effort
Res.B.4	4.3.5.2	Stabilize and support entry and exit points for urban search and rescue operations
Res.B.4	4.3.6	Provide status reports on urban search and rescue operations
Res.B.4	4.3.6.1	Provide timely situational awareness and response information and establish and maintain chronological log of events in the field
Res.B.4	4.3.7	Formulate redeployment plans for urban search and rescue assets and personnel
Res.B.4	4.3.7.1	Formulate decisions on the demobilization of regional and State first responder assets and personnel
Res.B.4	4.3.8	Provide care for rescuers, including the K-9 first responders

Course Scope (continued)

Additional Courses

TEEX US&R can provide additional courses related to search and rescue at Disaster City® or on-site at your jurisdiction:

US&R Rescue Program:

1. [Structural Collapse - Awareness](#)
2. [Collapse Rescue Operations](#)
3. [Structural Collapse Technician 2](#)
4. [Advanced Structural Collapse 3](#)
5. [Advanced Structural Collapse 4](#)
6. [Medical Considerations for the Rescue Technician](#)
7. [Rescue in a Contaminated Environment \(RICE\)](#)

US&R Search Program:

1. [Disaster Technical Search Specialist](#)
2. [Disaster Canine Search Specialist](#)
3. [Disaster Canine Workshop](#)
4. [Wilderness Search and Rescue](#)
5. [Wide Area Search](#) NOTE: offered at no cost to any eligible jurisdiction
6. [Canine Emergency Medical Care](#) NOTE: offered online at no cost to any eligible participant

US&R Hazardous Materials Specialist Program:

1. [WMD – Enhanced US&R Operations](#)
2. [WMD Considerations for US&R Hazardous Materials Specialists](#)

US&R Swiftwater & Flood Rescue Program:

1. [Swiftwater Rescue – Awareness](#)
2. [Swiftwater Rescue – Operations](#)
3. [Swiftwater Rescue – Technician](#)
4. [Swiftwater Rescue – Technician Refresher](#)

US&R Medical Program:

1. [Disaster Medical Specialist](#)
2. [WMD Considerations for the Medical Specialist](#)
3. [Medical Effects of Primary Blast Injuries](#) NOTE: offered online at no cost to any eligible participant
4. [EMS Operations & Planning for WMD](#) NOTE: offered at no cost to any eligible jurisdiction

US&R Command Staff Program:

1. [Search and Rescue Plans Officer](#)
2. [Search and Rescue Safety Officer](#)
3. [Search and Rescue Communications Specialist](#)
4. [Disaster Logistics Specialist](#)
5. [ICS for Structural Collapse Incidents](#)
6. [Developing a State/Regional CBRNE Task Force](#)

International US&R Program:

1. [International Urban Search and Rescue](#)
2. [International Structural Collapse Rescue](#)

US&R Full-Scale Exercise Program

Course Scope (continued)

Resource Requirements

Instructor to student ratio is 1:8 for all lectures and activities.

The following items are provided by TEEX for the delivery of this course:

- Classroom capable of handling all course participants
- Computer loaded with Microsoft PowerPoint®
- Computer Projector and screen
- Flip chart and/or whiteboard or chalkboard
- Flip chart markers and/or whiteboard markers or chalk
- Student Manuals (one per student)
- [Shoring Operations Guide](#) (one per student)
 - Army Corps of Engineers – 1st Edition, 2nd Printing – March 2008
- [Structural Specialist - Field Operations Guide](#) (one per student)
 - Army Corps of Engineers – 5th Edition, 2nd Printing – March 2008
- Instructor Manuals
- Module 0 – 4 Microsoft PowerPoint® presentation slides
- All tools, equipment, and supplies required to complete field exercises
- All lumber required to complete field exercises

Module Summary

Module #	Module Title	Time Allocation
Day One		
Module 0	Course Introduction	30 minutes
Module 1	Safety	1.5 hours
Module 2	Initial Shoring Review – Single Insertion Point Rakers	2.5 hours
Admin 0.1	Lunch	1 hour
Module 2	Initial Shoring Review – Single Insertion Point Rakers	5.5 hours
Day Two		
Module 2	Initial Shoring Review – Single Insertion Point Rakers	5 hours
Admin 0.2	Lunch	1 hour
Module 3	Multiple Insertion Point Rakers – Split Sole Rakers	5 hours
Day Three		
Module 3	Multiple Insertion Point Rakers – Split Sole Rakers	5 hours
Admin 0.3	Lunch	1 hour
Module 3	Multiple Insertion Point Rakers – Solid Sole Rakers	5 hours
Day Four		
Module 3	Multiple Insertion Point Rakers – Solid Sole Rakers	5 hours
Admin 0.3	Lunch	1 hour
Module 3	Multiple Insertion Point Rakers – Solid Sole Rakers	5 hours
Day Five		
Module 3	Multiple Insertion Point Rakers – Split Sole Rakers	5 hours
Admin 0.3	Lunch	1 hour
Module 3	Multiple Insertion Point Rakers – Split Sole Rakers	1 hours
Module 4	Skill Evaluation, Written Exam and Evaluation ¹	4 hours
TOTAL CLASS HOURS		50 hours

¹ Students build on skills throughout the training, demonstrating each skill before progressing. Students end the course with a final written exam testing their knowledge.

Module 0: Course Introduction

Summary: The students will become familiar with the general overview of the course, and instructors will explain the goal of the course, and describe the course outline and structure. Students will also complete all registration and class rosters forms.

Instructional Resources Required:

- Module 0 presentation slides
- Participant Manual
- Computer
- Projector

Terminal Learning Objective: Upon the completion of this module, participants will be able to describe the course and complete required forms.

Enabling Objective: Upon the conclusion of this module, participants will be able to:

- 0-1 Complete all introductory activities including course registration forms.
- 0-2 Explain the goal of the course.
- 0-3 Describe course outline and structure.

Duration: 30 minutes

Method of Instruction: Facilitated seminar format in a classroom environment

Instructor Ratio: 1:8

Required Reading: None

Special Instructions: None

Module 1: Safety

Summary: This module discusses proper safety procedures at a structural collapse incident. This course focuses on extended operations during complex urban search and rescue incidents, such as a multistory concrete building collapse that entombs large numbers of victims. Regardless of the collapse scenario encountered, first responders must be familiar with a variety of safety hazards and associated issues. Effective rescue operations at a structural collapse will only be possible if rescuers are fully aware of the hazards involved and the methods necessary to mitigate those hazards. In order for rescuers to perform at an optimum level of safety they will be able to describe:

- Categories of hazards
- Safety procedures
- Safety considerations
- Safety equipment

Additionally, special safety considerations, including fall protection for rescuers during construction of multiple insertion point raker systems. Understanding and properly applying these factors is essential if rescuers are to perform rescue operations safely in a structural collapse.

Instructional Resources Required:

- Module 1 presentation slides
- Participant Manual
- Computer
- Projector

Terminal Learning Objective: Upon the successful completion of this module, participants will be able to implement safety practices in planning and rescue operations and demonstrate the ability to use safety skills.

Enabling Objective: Upon conclusion of the module, participants will be able to:

- 1-1 Identify safety risk, hazards, and risk assessment components in a structural collapse.
- 1-2 Discuss the importance of recognizing and mitigating safety hazards.
- 1-3 Demonstrate the ability to use basic safety, security, and survival skills.
- 1-4 Employ the safety plan, lookouts, communications, escape routes, and safe zones (LCES).
- 1-5 Discuss fall protection techniques.

Duration: 1.5 hours

Method of Instruction: Facilitated seminar format in a classroom environment

Instructor Ratio: 1:8

Required Reading: None

Special Instructions: None

Module 2: Initial Shoring Review – Single Insertion Point Rakers

Summary: This module is a review of the basic shoring systems and exposes the students to common shores from the 50 hour and 80 structural collapse technician course. Students will review shoring principles such as nail patterns, LD 25, LD 35, insertion points, and other shoring concepts common to all raker systems. Additionally, students will be review pneumatic raker systems. This review will prepare students to move on to the more advanced multiple insertion point shoring systems which is the main focus of this course.

Instructional Resources Required:

- Module 2 presentation slides
- Participant Manual
- Computer
- Projector
- Tools, equipment, and supplies required to complete field exercises
- Lumber required to complete field exercises

Terminal Learning Objective: Upon the successful completion of this module, participants will be able to construct exterior shores including flying rakers, split sole rakers, and solid sole rakers.

Enabling Objective: Upon the conclusion of this module, participants will be able to:

- 2-1 Demonstrate the ability to construct flying rakers.
- 2-2 Demonstrate the ability to construct split sole rakers.
- 2-3 Demonstrate the ability to construct solid sole rakers.

Duration: 13.0 hours

Method of Instruction: Facilitated seminar format in a classroom environment

Instructor Ratio: 1:8

Required Reading: None

Special Instructions: None

Module 3: Multiple Insertion Point Rakers

Summary: This module provides students with the opportunity to construct multiple insertion point rakers. Students will assess collapsed structures, and with input from instructors, will determine appropriate raker systems required and demonstrate the ability to construct those systems. This module begins the scenario based aspect of the class. Students will arrive at the incident site daily as if it is the beginning of their response shift and start by checking rakers erected the day before. They will then move on to the shoring objectives for that day.

Instructional Resources Required:

- Module 3 presentation slides
- Participant Manual
- Computer
- Projector

Terminal Learning Objective: Upon the successful completion of this module, participants will be able to construct split sole and solid sole multiple insertion point rakers.

Enabling Objective: At the conclusion of this module, the participants will be able to:

- 3-1 Discuss multiple insertion point rakers.
- 3-2 Identify a multiple insertion point split sole raker.
- 3-3 Identify a multiple insertion point solid sole raker.
- 3-4 Describe situations in which multiple split sole rakers are used.
- 3-5 Describe situations in which multiple solid sole rakers are used.
- 3-6 Demonstrate the ability to construct a multiple insertion point split sole raker.
- 3-7 Demonstrate the ability to construct a multiple insertion point solid sole raker.
- 3-8 Perform as a team in a structural collapse environment.

Duration: 31.0 hours

Method of Instruction: Facilitated seminar format in a classroom environment

Instructor Ratio: 1:8

Required Reading: None

Special Instructions: None

Module 4: Final Exercise, Skill Evaluation, Written Exam and Course Evaluation

Summary: This module requires participants to demonstrate skills during a field exercise in Disaster City®. Additionally, the participants must complete a forty question written exam. Participants are also provided the opportunity to complete an end of course instructor and facility evaluation.

Instructional Resources Required:

- Module 4 presentation slides
- Participant Manual
- Skill Evaluation Check-off Sheet
- End of course written exam
- Computer
- Projector
- End of course evaluations

Terminal Learning Objective: Upon the completion of this module, participants will understand the most appropriate exterior shoring system to utilize on damaged structures and be able to employ those systems during a realistic field exercise while working as part of a rescue squad.

Enabling Objective: At the conclusion of this module, the participants will be able to:

- 4-1 Demonstrate proficiency at the safe and effective use of the various tools and equipment available to conduct structural collapse rescue operations;
- 4-2 Demonstrate proficiency at proper selection, placement and construction of shoring systems;
- 4-3 Apply appropriate safety practices and procedures during Structural Collapse Rescue operations;
- 4-4 Work as a Squad to plan and execute various Strategies and tactics during Structural Collapse Rescue Operations.

Duration: 4.0 hour

Method of Instruction: Skill Evaluation, written exam and course evaluation

Instructor Ratio: 1:8

Required Reading: None

Special Instructions: None

Reference Material

This program of instruction references a number of Department of Homeland Security documents which are included below for reference:

1. National Planning Scenarios, Department of Homeland Security
<https://odp.esportals.com>
2. National Preparedness Guidelines, Department of Homeland Security, September 2007
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