University of Illinois Fire Service Institute

Course Syllabus

Course Title: Structural Collapse Rescue Awareness and Operations

Course Duration: 46 hours

Program: Special Operations Training Program

Course Prerequisites: None

Course Description: The scope of this course is to prepare responders to operate as local members of a regional team within the National Incident Management System (NIMS) at an emergency incident requiring statewide response that has resulted in the failure of a building constructed of wood, masonry, or pre-fabricated light metal materials. This course is extensively hands-on and prepares the student to operate safely and efficiently at a building collapse. It offers practice in cutting, breaching, lifting, stabilizing, searching, shoring, packaging, and removing victims from a simulated collapse environment. This course is intense and physically demanding, but the competence and confidence that is gained is worth the sweat that is lost.

Course Requirements:

Pre-Course Work: None
Course Work:

- Attend and participate in all lectures, practicals, and scenarios
- Pass the written exam and skill evaluations

Post-Course Work: None

Required Textbook: None

Course Policies:

Attendance Policy: IFSI requires students to attend (100%) or make up all course content that to certification. Students are expected to attend on time and to remain in class for the duration of the course. Students MUST COMPLETE all portions of a certification course, both classroom and practical, to be eligible to receive their certification.

If a student misses any portion of class with an accumulated absence of 20% or less of scheduled class time, it will be the student's responsibility to arrange the make-up of the missed course content with the instructor(s) or program manager. The student must make up the specific course content that s/he missed, not just the hours. Make-ups are limited to 20% of scheduled class time. Make-ups must be documented on the class roster. If a student's absence is greater than 20% refer to "True Emergences" section of the IFSI Examination Policy.

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Safety Policy: Students shall understand and follow all instructions pertaining to operational safety, as stated by instructors, or as written in course materials. Instructors and students shall be always mindful of safety. Conduct judged to be unsafe shall be grounds for dismissal from the course.

Academic Integrity Policy: IFSI has the responsibility for maintaining academic integrity to protect the quality of the education provided through its courses, and to protect those who depend upon our integrity. It is the responsibility of the student to refrain from infractions of academic integrity, from conduct that may lead to suspicion of such infractions, and from conduct that aids others in such infractions. Any violation of the code of conduct is grounds for immediate dismissal from the course.

Grading Policy: Decisions regarding certificates of course completion shall be made solely by the lead instructor of the course. All grading of exams shall be conducted by the Curriculum / Testing Office. All grading of practical exercises shall be based upon the standards set by the regulatory agency referenced in the course material and IFSI.

> Retesting: If a student fails to pass an exam, retesting takes place on set dates at regional sites across the state. More information is provided in the course completion e-mail and on the IFSI website.

American Disabilities Act: As guaranteed in the Vocational Rehabilitation Act and in the American Disabilities Act, if any student needs special accommodations, they are to notify their instructor and provide documentation as soon as possible so arrangements can be made to provide for the student's needs. If arrangements cannot be made at the class site, the student will test at an alternative time and place where the special accommodations can be made.

Evaluation Strategy: Written and practical skill testing is conducted at the completion of the course. In addition, simulated rescue evolutions involving various rescue problems are conducted throughout the course.

Course Content:

Module: C-1
Title: Destructive Forces
Terminal Learning Objective:
At the conclusion of this module, the student will differentiate between the various destructive forces based on how they may affect buildings and structures.

Module: C-2
Title: Force Types
Terminal Learning Objective:
At the conclusion of this module, the student will distinguish between the types of forces that are exerted on materials used in building construction.

Module: C-3
Title: Structural Members and Vertical Load Systems
Terminal Learning Objective:
At the conclusion of this module, the student will categorize the fundamental concepts of structural members as they are used in building construction.

Module: C-4
Title: Building Types
Terminal Learning Objective:
At the conclusion of this module, the student will describe attributes of the various building types.

Module: C-5
Title: Building Assessment
Terminal Learning Objective:
At the conclusion of this module, the student will apply building assessment principles to a collapsed structure.

Module: C-6
Title: Marking Systems
Terminal Learning Objective:
At the conclusion of this module, the student will use the different marking systems utilized during a structural collapse incident.

Module: C-7
Title: Rescue
Terminal Learning Objective:
At the conclusion of this module, the student will explain the various elements of rescue operations.

Module: C-8
Title: Safety
Terminal Learning Objective:
At the conclusion of this module, the student will explain how operations at the structural collapse incident can be made safer.

Module: C-9
Title: First-In Officer and The Rescue Team
Terminal Learning Objective:
At the conclusion of this module, the student will state the duties of those responding to a structural collapse incident.

Module: C-10
Title: Tools
Terminal Learning Objective:
At the conclusion of this module, the student will explain the proper use of various tools used at a structural collapse incident.

Module: C-11
Title: Shoring Systems
Terminal Learning Objective:
At the conclusion of this module, the student will explain the applications of the various shoring systems.

Module: C-12
Title: Victim Assessment and Patient Packaging
Terminal Learning Objective:
At the conclusion of this module, the student will summarize the emergency medical care considerations specific to structural collapse operations.

Module: P-13
Title: Wood Cutting
Terminal Learning Objective:
At the conclusion of this module, the student will demonstrate the proper use of the various tools utilized for cutting wood.

Module: P-14
Title: Metal Cutting
Terminal Learning Objective:
At the conclusion of this module, the student will demonstrate the proper use of various tools utilized for cutting metal.

Module: P-15
Title: Breaching
Terminal Learning Objective:
At the conclusion of this module, the student will demonstrate the proper operations for completing a breach for entry.

Module: P-16
Title: Specialty Tools
Terminal Learning Objective:
At the conclusion of this module, the student will demonstrate the use of various specialty tools that may be utilized during a structural collapse rescue incident.

Module: P-17
Title: Rescue Shoring
Terminal Learning Objective:
At the conclusion of this module, the student will utilize various shoring systems to stabilize a collapsed structure.

Module: P-18
Title: Lifting and Stabilizing
Terminal Learning Objective:
At the conclusion of this module, the student will lift and stabilize selected objects.

Module: P-19
Title: Void Search
Terminal Learning Objective:
At the conclusion of this module, the student will remove a victim from a collapse environment.

Module: P-20
Title: Breaching and Breaking
Terminal Learning Objective:
At the conclusion of this module, the student will create a series of breaches large enough and so configured for entry.

Reference List:

FEMA National Urban Search and Rescue Response System: Incident Command System for Structural Collapse Incidents

FEMA National Urban Search and Rescue Response System: National US&R Response System Operational Systems Description US&R Safety Program and Search Procedures

FEMA National Urban Search and Rescue Response System: Rescue Specialist Training Manual, Vol. 1 and 2

FEMA National Urban Search and Rescue Response System: US&R Safety Program and Search Procedures

National Fire Protection Association Standards 1006 *Standard for Rescue Technician Professional Qualifications*

National Fire Protection Association Standards 1670 *Standard on Operations and Training for Technical Search and Rescue incidents*

United States Army Corps of Engineers: Urban Search and Rescue Structures Specialist Field Operations Guide

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Course Schedule

DAY ONE

Event	Duration
Introduction	10 minutes
Module C1 - Destructive Forces	30 minutes
Module C2 - Force Types	20 minutes
Module C3 - Structural Members and Load Systems	30 minutes
Module C4 - Building Types	1 hour
Break	
Module C5 - Building Assessment	1 hour
Module C6 - Marking Systems	20 minutes
Lunch	
Module C7 - Rescue	30 minutes
Module C8 - Safety	30 minutes
Module C9 - First-In Officer and Rescue Team	30 minutes
Module C10 - Tools	20 minutes
Break	
Module C11 - Shoring Systems	2 hours
Break	
Module C12 - Victim Assessment and Patient Packaging	20 minutes

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DAY TWO

Event	Duration
Module P13 - Wood Cutting Station	1 hour
Module P14 - Metal Cutting & Burning Station	1 hour
Module P15 - Breaching & Breaking Station	1 hour
Module P16 - Specialty Tools Station	1 hour
Lunch	
Module P17 - Rescue Shoring Station	6 hours
Window and Door Shoring System	
T-Spot & Vertical Shoring System	
Solid Raker Shoring System	
Spilt Raker Shoring System	

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DAY THREE

Event	Duration
Module P17 - Rescue Shoring Station	6 hours
Laced Post Shoring System	
Sloped Floor Shoring System	
Horizontal Shoring System	
Raked Raker Shoring System	
Lunch	
Module P18 - Lifting and Stabilizing Station	1 hour 30 minutes
Module P19 - Void Search Station	1 hour 30 minutes
Module P20 - Breaching & Breaking Confined Space	3 hours

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DAY FOUR

Event	Duration
House Final Scenario	8 hours
Written Final Exam	2 hours

DAY FIVE

Event	Duration
Void Search Final Scenario	6 hours