

Program of Instruction

Course Syllabus

Course Title: Confined Space Rescue Technician

Course Duration: 48 hours

Program: Special Operations Training Program

Course Prerequisites:

- Rope Rescue Operations
- Confined Space Rescue Operations
- Hazardous Materials Operations

Course Description: The goal of this course is to prepare responders to operate as a local member of a regional team within the NIMS (National Incident Management System) at a CBRNE (Chemical-Biological-Radiological-Nuclear-Explosive) WMD (Weapons of Mass Destruction) Event requiring statewide response that has resulted in the need for a permit required confined space rescue at the Technician level. The Confined Space Rescue Technician course has been designed in accordance with the NFPA (National Fire Protection Association) 1670 Standard on Operations and Training for Technical Search and Rescue Incidents, 2009 edition as well as NFPA 1006 Standard for Technical Rescuer Professional Qualifications, 2013 Edition. This class reviews the federal and state regulations for confined space, high angle, and hazardous materials incidents, the use of specialized equipment for atmospheric monitoring, and commercial and rescuer constructed retrieval systems. This course includes simulated rescue evolutions requiring a mixture of all three disciplines, challenging the responder to deal with rescuing the rescuer in a contaminated atmosphere. Special emphasis is given to rescuer safety, tactical scene management, patient care, decontamination, and the construction and operation of retrieval systems.

Course Requirements and/or Recommendations: These can be divided into three categories: those completed prior to arriving in class (Pre-Course Work), those completed during class, such as homework assignments and quizzes (Course Work), and requirements completed after class but prior to receiving a certificate of completion. (Post-Course Work)

Summary of Directions

Pre-Course Work: Review OSHA CFR 1910.146. Available at osha.gov.
Review all knots, anchors, belays, and haul systems.

Course Work: Complete all homework assignments prior to Day 3 review.

Post-Course Work: None

Course Policies:

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 mindful of safety at all times. Conduct judged to be unsafe shall be grounds for dismissal from the course.

Academic Integrity Policy: IFSI has the responsibility for maintaining academic integrity so as 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.

Attendance Policy: The student must attend 100% of the course to obtain a certificate of completion.

Failure to comply with these policies, as stated will be recorded as an “incomplete”. An “incomplete” will be documented for a period of one year from the last date of class. If the requirements to complete the class are not met within the time period, the course will be recorded as a “fail” and the student will be required to register for the entire class and successfully complete it in order for Illinois Fire Service Institute Staff to sign off on certification.

Module: 1

Title: Orientation

Terminal Learning Objectives:

At the conclusion of this module, the student will explain the scope of operating at a Technician-level confined space rescue incident potentially involving WMD.

Module: 2

Title: Personal Protective Equipment

Terminal Learning Objectives:

At the conclusion of this module, the student will use the proper protective equipment, including chemical protective clothing, to perform tasks safely at confined space rescue incidents.

Module: 3

Title: Chemical and Physical Properties

Terminal Learning Objectives:

At the conclusion of this module, the student shall apply chemical and physical properties of a hazardous material or WMD present at a confined space rescue incident to predict how it may behave in a confined space.

Module: 4

Title: Monitoring

Terminal Learning Objectives:

At the conclusion of this module, the student will demonstrate the use of monitoring equipment available to detect hazardous materials at a confined space incident.

Module: 5

Title: Ventilation

Terminal Learning Objectives:

At the conclusion of this module, the student will apply the proper procedures to ventilate a confined space.

Module: 6

Title: Isolation

Terminal Learning Objectives:

At the conclusion of this module, the student will isolate any particular hazard of a confined space.

Module: 7

Title: Decontamination

Terminal Learning Objectives:

At the conclusion of this module, the student will *demonstrate* proper selection, set-up and use of decontamination systems as they relate to a Technician-level confined space incident involving hazardous materials, WMD, or CBRNE.

Module: 8

Title: Rescue Operations

Terminal Learning Objectives:

At the conclusion of this module, the student will explain how the 5-Step Isolate to Terminate process is affected by the presence of hazardous materials, toxic industrial chemicals or CBRNE at a confined space rescue.

Module: 9

Title: Collecting and Interpreting Hazard and Response Information

Terminal Learning Objectives:

At the conclusion of this module, the student will *utilize* various resources to collect information about a toxic industrial chemical, CBRNE, or commercially available hazardous material as it relates to a confined space rescue.

Module: 10

Title: Haul Systems

Terminal Learning Objectives:

At the conclusion of this module, the student will operate haul systems.

Module: 11

Title: Patient Packaging

Terminal Learning Objectives:

At the conclusion of this module, the student will package a patient in a confined space during rescue operations involving a hazardous material, WMD, or CBRNE.

Module: 12

Title: Tools

Terminal Learning Objectives:

At the conclusion of this module, the student will safely operate tools and equipment used in confined space rescue.

Module: 13

Title: Practical Scenarios

Terminal Learning Objectives:

At the conclusion of this module, the students will have conducted simulated rescues using techniques and equipment needed to properly perform confined space rescues involving entrapment, engulfment and hazardous materials.

Evaluation Strategy:

Students are evaluated on required skills the first day involving rope rescue skills. All modules with a cognitive orientation have objectives evaluated in an end of course written examination.

Skills for confined space rescue incidents at the Technician level are evaluated throughout the course as the majority of class time is spent in psychomotor activities, required and post course evaluation check lists and other documentation are a part of the skills packet.

Reference List:

High Angle Rescue Techniques, Third Edition, Tom Vines and Steve Hudson
(*Figures reprinted from High Angle Rescue Techniques, 3rd Edition, Vines and Hudson , Copyright 2005 with permission from Elsevier*)

Confined Space Levels I and II, Browne, George J., and Crist, Gus S., 2010
Delmar Publishers.

On Rope, Second Edition, Allen Padgett and Bruce Smith

The Ashley Book of Knots, Clifford W. Ashley

Engineering Practical Rope Rescue Systems Michael Brown, 2000

CMC Rope Rescue Manual, Third Edition, 1998

Confined Space and Structural Rope Rescue, Michael Roop Thomas Vines, and
Richard Wright

Rope Rescue for Firefighting, Ken Brennan, Fire Engineering, 1998

US Manual of Cave Rescue, National Speleological Society

Hazardous Materials, Managing the Incident Greg Knoll, Michael Hildebrand,
Fourth Edition

Pocket Guide to Chemical Hazards, NIOSH (Current edition)

IFSI Rope Rescue Technician, Field Rope Operation Guide, Feb. 2011

USAR Structures Specialist Field Operations Guide, U.S. Army Corps of
Engineers Urban Search and Rescue Program, 7th Edition, November 2012

NFPA 1670 – Standard on Operations and Training for
Technical Search and Rescue Incidents, 2009 Edition

NFPA 1006 – Standard for Technical Rescuer Professional
Qualifications, 2013 Edition

NFPA 1983 – Standard on Life Safety Rope and Equipment for Emergency
Services, 2012 Edition

NFPA 472 – Standard for Competence of Responders to Hazardous Materials/
Weapons of Mass Destruction Incidents, 2013 Edition

NFPA 473 – Standard for Competence for EMS Personnel to Hazardous
Materials/Weapons of Mass Destruction Incidents, 2013 Edition

OSHA 29CFR 1910.120 – Hazardous Materials

OSHA 29CFR 1910.146 – Confined Space
 OSHA 29CFR 1910.134 – Respiratory Protection
 OSHA 29CFR 1910.147 – Lock Out / Tag Out
 OSHA 29CFR 1910.151 – Medical / First Aid
 OSHA 29 CFR 1910.1000 - Air Contaminants
 OSHA 29CFR 1926.500 – Fall Protection.

Class Schedule

Day 1

Module 1	Orientation	10 minutes
Module 2	Personal Protective Equipment	20 minutes
Module 3	Hazardous Chemical and Physical Properties	20 minutes
Module 4	Monitoring	30 minutes
Module 5	Ventilation	10 minutes
Module 6	Isolation	10 minutes
Module 7	Decontamination	20 minutes
Module 8	Rescue Operations	1 hour
Module 9	Collecting and Interpreting Hazard and Response Information and Drill 9.1	1 hour

Lunch

Practical Exercises

Knot Drill 10.1	1 hour
Anchor, Haul Systems Drill 10.2	3 hours
Patient Packaging Drill 11.1	30 minutes
Don/Doff Drill 2.1	45 minutes
Decon Drill 7.1	45 minutes

Day 2

Module 8	Command Drill 8.1 Tabletop Exercise	2 hours 1 hour
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Day 2 (con't)

Practical Exercises

Recon Drill 8.2 / Tool Drill 12.1	30 minutes
Monitoring Drill 4.1	30 minutes

Lunch

Practical Scenarios

Pickoff / Shaft Drill 13.1	2 ½ hours
Horizontal Hazmat Drill 13.2	2 ½ hours

Day 3

Homework Review

Practical Scenarios

Entrapment Drill 13.3	2 hours
Vertical Engulfment Drill 13.4	2 hours

Lunch

Final Exam	1 hour
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Practical Scenarios

Large Scenario – Operational Period 1 4 hours

Meal break

Large Scenario – Op. Period 1(con't) 4 hours

Day 4

Practical Scenarios

Large Scenario – Operational Period 2 4 hours

Large Scenario – Operational Period 3 4 hours

Due to the all day nature of the evolution and the limits of those operating in CPC and PPE, the evolution “breaks” regardless of progress at the halfway mark of the day for a meal break, rest, and rehabilitation.

Day 5

Practical Evaluations

Large Scenario – Operational Period 4 5 hours

Lunch

CEQ's, Clean-up, Inventory 3 hours