

# University of Illinois Fire Service Institute

## Course Syllabus

**Course Title:** Confined Space Rescue Technician

**Course Duration:** 40 hours

**Program:** Special Operations Training Program

**Course Prerequisites:** Rope Rescue Operations, Confined Space Rescue Operations

**Course Description:**

The scope of this course is to prepare local responders to operate as a local member of a regional team within the NIMS that has resulted in the need for a Technician-level, Permit-required confined space rescue. The Confined Space Rescue Technician course has been designed in accordance with NFPA Standards. The class covers the federal and state regulations; use of specialized equipment for atmospheric monitoring, ventilation, and isolation; supplied air use inside a confined space; and employment of rescuer-constructed retrieval systems. Special emphasis will be given to rescuer safety, scene management, patient care and movement utilizing partial-body patient immobilization, and the construction and operation of retrieval systems. This course includes simulated rescue evolutions requiring a mixture of disciplines, challenging the responder to deal with performing a rescue in a contaminated atmosphere.

**Course Requirements and/or Recommendations:**

Pre-Course Work – Completed through student Resource Center at [www.fsi.illinois.edu](http://www.fsi.illinois.edu)

- Watch tutorials on rope tying.
- Complete “Knots” required skill sheet.
- Review “Anchor Systems”, “Belay Systems”, and “Haul Systems” required skill sheets.
- Review “Decon video”
- Read course safety rules.

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

Post-Course Work – None

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## Course Policies:

**Attendance Policy:** IFSI requires students to attend (100%) or make up all course content that leads 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 Emergencies" section of the IFSI Examination Policy.

**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.

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**Evaluation Strategy:** 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 most of the class time is spent in psychomotor activities, required and performance evaluation checklists and other documentation are a part of the skills packet.

## **Course Content:**

Module: 1

Title: Orientation

Terminal Learning Objective:

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

Module: 2

Title: Personal Protective Equipment

Terminal Learning Objective:

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: 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: 4

Title: Ventilation

Terminal Learning Objectives:

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

Module: 5

Title: Isolation

Terminal Learning Objectives:

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

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Module: 6

Title: Patient Packaging

Terminal Learning Objectives:

At the conclusion of this module, the student will package a patient in a Technician-level confined space rescue.

Module: 7

Title: Rope Rigging

Terminal Learning Objectives:

At the conclusion of this module, the student will construct and operate anchors, tripods, and haul systems along with the necessary components.

Module: 8

Title: Rescue Operations

Terminal Learning Objectives:

At the conclusion of this module, the student will use the Incident Management System, 5-Step Isolate to Terminate process, and related components as it pertains to confined space rescue.

Module: 9

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: 10

Title: Practical Scenarios

Terminal Learning Objective:

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

## **Reference List:**

Equipment manufacturer's instructions

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

Confined Space Technician Manual, revised 2<sup>nd</sup> ed, November 2017, CMC  
Rescue, Inc.

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

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IFSI Confined Space Rescue, Field Operations Guide, September 2015

IFSI Hazardous Materials, Field Operations Guide, June 2016

IFSI Rope Rescue Technician, Field Rope Operation Guide, August 2014, 2<sup>nd</sup> Edition

IFSI Special Operations Workbook, Version 1.1

NFPA, Fire Protection Guide to Hazardous Materials, 2010 ed.

NFPA 350 – Guide for Safe Confined Space Entry and Work, 2019 Edition

NFPA 472 – Standard for Competence of Responders to Hazardous Materials / Weapons of Mass Destruction Incidents, 2018 Edition

NFPA 473 – Standard for Competence for EMS Personnel to Hazardous Materials / Weapons of Mass Destruction Incidents, 2018 Edition

NFPA 1006 – Standard for Technical Rescuer Professional Qualifications, 2021 Edition

NFPA 1072 – Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications, 2017 Edition

NFPA 1500 – Standard on Fire Department Occupational Safety, Health, and Wellness Program, 2021 Edition

NFPA 1670 – Standard on Operations and Training for Technical Search and Rescue Incidents, 2017 Edition

NFPA 1855 – Standard on Selection, Care, and Maintenance of Protective Ensembles for Technical Rescue Incidents, 2018 Edition

NFPA 1983 – Standard on Life Safety Rope and Equipment for Emergency Services, 2017 Edition

NIOSH – Pocket Guide to Chemical Hazards, <https://www.cdc.gov/niosh/npg/>

OSHA 29 CFR 1910.120 – Hazardous waste operations & emergency response

OSHA 29 CFR 1910.132 – General requirements

OSHA 29 CFR 1910.134 – Respiratory protection

OSHA 29 CFR 1910.146 – Permit-required confined spaces

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OSHA 29 CFR 1910.147 – The control of hazardous energy (LO/TO)

OSHA 29 CFR 1910.156 – Fire brigades

OSHA 29 CFR 1910.1000 – Air contaminants

OSHA 29 CFR 1926.500 – Fall Protection

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

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## Course Schedule

### DAY ONE

<u>Event</u>	<u>Duration</u>
Module 1 - Orientation	20 minutes
Module 2 - Personal Protective Equipment	20 minutes
Module 3 - Monitoring	30 minutes
Module 4 - Ventilation	15 minutes
Module 5 - Isolation	15 minutes
Module 6 - Patient Packaging	35 minutes
Module 7 - Rope Rigging	45 minutes
Module 8 - Rescue Operations	1 hour
<b>Lunch</b>	
Practical Exercises	
Knot Drill 7.1	30 minutes
Anchor / Tripod Drill 7.2	1 hour 30 minutes
Patient Packaging Drill 6.1	2 hours

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### DAY TWO

<u>Event</u>	<u>Duration</u>
Tabletop Scenarios	1 hour
Practical Exercises	
Communications Drill 8.1	30 minutes
Recon 8.2, Tool 9.1, Vent 4.1, Isolation 5.1	30 minutes
Monitoring Drill 3.1	30 minutes
Level B Don/Doff Drill 2.1	30 minutes
<b>Lunch</b>	

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## DAY TWO (con't)

<u>Event</u>	<u>Duration</u>
Practical Exercises	
PPE / SABA Drill 2.2	30 minutes
SABA Entry Procedures Drill 8.3	2 hours
Shaft Drill 7.3	2 hours 30 minutes

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## DAY THREE

<u>Event</u>	<u>Duration</u>
Practical Scenarios	
Entrapment Drill 10.1	2 hours
Vertical Engulfment Drill 10.2	2 hours
 <b>Lunch</b>	
Tank Car – Tripod Drill 10.3	2 hours
Underside Tank Drill 10.4	2 hours

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## DAY FOUR

<u>Event</u>	<u>Duration</u>
Practical Scenarios	
Large Scenario 10.5 – Operational Period 1	4 hours
Large Scenario 10.5 – Operational Period 2	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.**



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## DAY FIVE

<u>Event</u>	<u>Duration</u>
Practical Evaluations	
Final Scenarios 10.6	2 hours
Final Scenarios 10.6	2 hours
Final Scenarios 10.6	2 hours
<b>Lunch</b>	
Final Exam	2 hours