University of Illinois Fire Service Institute

Course Syllabus

Course Title: Confined Space Rescue Awareness and Operations

Course Duration: 40 hours

Program: Special Operations Training Program

Course Prerequisites: Rope 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 an Operations-level, Permit-required confined space rescue. The Confined Space Rescue Awareness and Operations course has been designed in accordance with NFPA Standards. The class covers the federal and state regulations; the use of specialized equipment for atmospheric monitoring, ventilation, and isolation; SCBA 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 full-body patient immobilization, and the construction and operation of retrieval systems. Simulated rescue evolutions involving various rescue problems will be conducted.

Students who successfully complete the course will qualify for National Certification through Pro Board as NFPA 1006 2021 Edition **Operations** Chapter 7.2.

Course Requirements and/or Recommendations:

Pre-Course Work – Completed through student Resource Center at www.fsi.illinois.edu

- Read OSHA Standard CFR 1910.146 on Permit-required confined spaces.
- Watch tutorials on rope tying.
- Complete “Knots” required skill sheet.
- Review “Anchor Systems”, “Belay Systems”, and “Haul Systems” required skill sheets.
- Read course safety rules.
- Take a short quiz.

Course Work – Complete all homework assignments before Day 3 review.

Post-Course Work – Complete On-line Course Evaluation Questionnaire

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

The textbook is loaned to the student by IFSI for the duration of the class.

Reading Assignments:

Day 1 – Chapters 1, 2, 11
Day 2 – Chapters 3, 4, 7
Day 3 – Chapters 5, 6, 8, 9

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

Skills for confined space rescue incidents at the Operations 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 identify the applicable requirements and regulations pertaining to confined space rescue.

Module: 2
Title: Personal Protective Equipment
Terminal Learning Objective:
At the conclusion of this module, the student will use the proper protective equipment to perform tasks safely at confined space rescue incidents.

Module: 3
Title: Knots Review
Terminal Learning Objective:
At the conclusion of this module, the student will demonstrate the use of knots in confined space rescue operations.

Module: 4
Title: Anchors
Terminal Learning Objective:
At the conclusion of this module, the student will demonstrate the use of appropriate anchors in confined space rescue operations.

Module: 5
Title: Haul Systems
Terminal Learning Objective:
At the conclusion of this module, the student will demonstrate the use of rope in confined space rescue operations.

Module: 6
Title: Monitoring
Terminal Learning Objective:
At the conclusion of this module, students will monitor the atmosphere within a Permit-required confined space.

Module: 7
Title: Ventilation
Terminal Learning Objective:
At the conclusion of this module, the student will implement the procedures to properly ventilate a confined space.

Module: 8
Title: Isolation
Terminal Learning Objective:
At the conclusion of this module, the student will isolate any particular hazard of a confined space.

Module: 9
Title: Patient Packaging
Terminal Learning Objective:
At the conclusion of this module, the student will package a patient involved in a confined space rescue.

Module: 10
Title: Rescue Operations
Terminal Learning Objective:
At the conclusion of this module, the student will use the Incident Management System and related components as it pertains to confined space rescue.

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Module: 11
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 Operations-level confined space rescues.

Reference List:

Confined Space Entry and Rescue Manual, revised 2nd ed, November 2017, CMC Rescue, Inc.

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

Equipment manufacturer's instructions

IFSI Confined Space Rescue, Field Operation Guide, September 2015

IFSI Rope Rescue Technician, Field Rope Operation Guide, August 2014, 2nd 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 1006 – Standard for Technical Rescuer Professional Qualifications, 2021 Edition

NFPA 1500 – Protective Clothing and Protective Equipment, 2018 Edition

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

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

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

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

OSHA 29 CFR 1910.120 – Hazardous waste operations and emergency response

OSHA 29 CFR 1910.132 – Personal Protective Equipment

OSHA 29 CFR 1910.134 – Respiratory protection

OSHA 29 CFR 1910.146 – Permit-required confined spaces

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

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Course Schedule

DAY ONE

Event	Duration
Module 1 - Orientation	1 hour
Module 2 - Personal Protective Equipment	30 minutes
Module 3 - Knot Review	30 minutes
Module 4 - Anchors	1 hour 30 minutes
Module 5 - Haul Systems	30 minutes
Lunch	
Practical Exercises	
Knot Drill 3.1	1 hour
Anchor / Tripod Drill 4.1	1 hour
Haul Systems Drill 5.1	2 hours

DAY TWO

Event	Duration
Module 6 - Monitoring	45 minutes
Monitoring Drill 6.1	30 minutes
Module 7 - Ventilation	45 minutes
Module 8 – Isolation	30 minutes
Practical Exercises	
Ventilation Drill 7.1	30 minutes
Isolation Drill 8.1	30 minutes
Communications Drill 10.1	30 minutes
Lunch	
Practical Exercises	
PPE / SCBA Drill 2.1	30 minutes
Entry Procedures Drill 10.2	1 hour 30 minutes
Vertical Rigging/Non-Entry Drill 4.2	2 hours

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DAY THREE

Event	Duration
Module 9 - Patient Packaging	30 minutes
Module 10 - Rescue Operations	45 minutes
Tabletop Scenarios	45 minutes
Practical Exercises	
Patient Packaging Drill 9.1	2 hours
Lunch	
Practical Exercises	
Grain Bin Drill 4.4	2 hours
Aerial Apparatus Drill 4.3	2 hours

DAY FOUR

Event	Duration
Practical Exercises	
Rapid Evacuation / Vertical Entry Drill 9.2	2 hours
Tank Car – Supported Ladder Jib Drill 4.5	2 hours
Lunch	
Practical Scenarios	
Tank / Elevator Scenario 11.1	2 hours
Horizontal Hopper Scenario 11.2	2 hours

DAY FIVE

Event	Duration
Practical Evaluations	
Final Scenarios 11.3	1 hour 30 minutes
Final Scenarios 11.3	1 hour 30 minutes
Final Scenarios 11.3	1 hour 30 minutes
Final Scenarios 11.3	1 hour 30 minutes
Lunch	
Final Exam	2 hours