

# Program of Instruction

## Course Syllabus

**Course Title:** Rope Rescue Operations – Level I

**Course Duration:** 40 Hours

**Program:** Special Operations Training Program

**Course Prerequisites:** None

**Course Description:** The scope of this course is to prepare local responders to operate as a local member of a regional team within NIMS at an event requiring a statewide response that has resulted in the need for low or high angle rescue. This course provides personnel with the basic knowledge and skills needed to perform rescues using rope systems. The class will cover the use of rope, rope equipment, hardware, construction of mechanical advantage systems, belay and safety systems, anchor systems, patient packaging self-rescue and vertical rescue litter handling techniques. Special consideration will be given to the policies of standard-making agencies such as OSHA, ANSI, NFPA, and others.

**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: None

Course Work:

- Attend and participate 100% of the course.
- Completion of the final exam with a score of at least 70%.
- Complete and pass all practical skill tests administered.

Post-Course Work: None

### **Textbook:**

High Angle Rope Rescue Techniques Levels I & II, Fourth Edition 2016, Tom Vines and Steve Hudson

## **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 Emergences" 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 mindful of safety at all times. Conduct judged to be unsafe shall be grounds for dismissal from the course. See Safety Rules for Rope Rescue Courses.

**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.

**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. Students must obtain a score of 70% or better on the final exam.

## **Course Content:**

### **Module: 1**

Title: Introduction

#### Terminal Learning Objective

At the conclusion of this lecture, the student will explain the purpose of rope rescue operations and the requirements students must fulfill to successfully complete the course.

### **Module: 2**

Title: Safety

#### Terminal Learning Objective

At the conclusion of this module, students will apply the safety rules to rope rescue operations.

### **Module: 3**

Title: Rope

#### Terminal Learning Objective

At the conclusion of this module, the student will summarize characteristics of rope used in rope rescue.

### **Module: 4**

Title: Knots

#### Terminal Learning Objective

At the conclusion of this module, the student will summarize characteristics of knots used in rope rescue.

### **Module: 5**

Title: Webbing

#### Terminal Learning Objective

At the conclusion of this module, the student will use webbing for conducting rope rescue operations.

### **Module: 6**

Title: Auxiliary Equipment

#### Terminal Learning Objective

At the conclusion of this module, the student will explain the use of auxiliary rope equipment for conducting rope rescue operations.

### **Module: 7**

Title: Forces

#### Terminal Learning Objective:

At the conclusion of this module, the student will calculate forces impacting rope rescue operations.

**Module: 8**

Title: Anchors

Terminal Learning Objective:

At the conclusion of the module, the student will construct anchor systems for rope rescue.

**Module: 9**

Title: Belay Systems

Terminal Learning Objective:

At the conclusion of this module, the student will operate a belay system.

**Module: 10**

Title: Ascending and Descending

Terminal Learning Objective:

At the conclusion of this module, the student will ascend and descend a fixed rope in a low angle and high angle environment.

**Module: 11**

Title: Haul Systems

Terminal Learning Objective:

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

**Module: 12**

Title: Low Angle Lowering Operations

Terminal Learning Objective:

At the conclusion of the module, the student will operate a lowering system including a belay system in a low angle environment.

**Module: 13**

Title: Patient Packaging

Terminal Learning Objective:

At the conclusion of this module, the student will package a patient in a litter and transport the patient in a low angle environment.

**Module: 14**

Title: Lowering to Hauling Operations

Terminal Learning Objective:

At the conclusion of the module, the student will operate a lowering system including a belay system then converting to a haul system in a high angle environment.

**Reference:**

NFPA 1500, Protective Clothing and Protective Equipment, 2013 Edition

NFPA 1006, Standard for Technical Rescue Personnel Professional Qualifications, 2013 Edition

NFPA 1670, Standard on Operating and Training for Technical Rescue Incidents, 2014 Edition

NFPA 1983, Fire Service Life Safety Rope and System Components, 2012 Edition

High Angle Rescue Techniques, Third Edition 2004, Tom Vines and Steve Hudson

High Angle Rope Rescue Techniques Levels I & II, Fourth Edition 2016, Tom Vines and Steve Hudson

On Rope, New Revised Edition 1996, Allen Padgett and Bruce Smith

The Ashley Book of Knots, Clifford W. Ashley, 1944

Office of the State Fire Marshal, Rope Operations Requirements IRM, May, 2004

Engineering Practical Rope Rescue Systems, Michael G. Brown, 2000

CMC Rope Rescue Manual, Fourth Edition New revised, 2013

U.S. Manual of Cave Rescue, National Speleological Society

Rope Levels I and II, Jeff Matthews 2009

## Class Schedule

### Day 1

|              |                             |                   |
|--------------|-----------------------------|-------------------|
| Module 1     | Introduction and paper work | 30 minutes        |
| Module 2     | Safety                      | 30 minutes        |
| Module 3     | Rope                        | 1 hour            |
|              | 3.1 Rope Inspection         | 30 minutes        |
|              | Issue Equipment             | 1 hour 30 minutes |
| <b>Lunch</b> |                             |                   |
| Module 4     | Knots                       | 30 minutes        |
|              | 4.1 Knots                   | 2 hours           |
| Module 5     | Webbing                     | 15 minutes        |
| Module 6     | Ancillary Equipment         | 1 hour            |
| Module 7     | Forces                      | 15 minutes        |

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### Day 2

|                  |                                  |            |
|------------------|----------------------------------|------------|
| Equipment Review |                                  | 30 minutes |
| Knot Practice    |                                  | 30 minutes |
| Module 8         | Anchors                          | 1 hour     |
|                  | 8.1 Webbing & Anchor Straps      | 15 minutes |
|                  | 8.2 Load Distributing Anchors    | 30 minutes |
|                  | 8.3 Tensionless Hitch            | 15 minutes |
|                  | 8.4 Pickets                      | 30 minutes |
| Module 5         | Webbing                          |            |
|                  | 5.1 Overhand bend Water knot     | 15 minutes |
| Module 11        | Haul Systems                     |            |
|                  | 11.1 Load Releasing Hitch        | 15 minutes |
| <b>Lunch</b>     |                                  |            |
| Module 9         | Belay                            | 30 minutes |
|                  | 9.1 Constructing/Operating Belay | 45 minutes |
|                  | 9.2 Belay Drop                   | 45 minutes |
| Module 10        | Ascending & Descending           |            |
|                  | 10.1 Prusik Drill                | 1 hour     |
|                  | 10.2 Rack Drill                  | 1 hour     |

### **Day 3**

|                  |                                       |            |
|------------------|---------------------------------------|------------|
| Equipment Review |                                       | 30 minutes |
| Knot Practice    |                                       | 30 minutes |
| Module 11        | Haul Systems                          | 2 hours    |
|                  | Haul Systems Overview                 | 1 hour     |
| <b>Lunch</b>     |                                       |            |
| Module 11        | Haul Systems                          |            |
|                  | Haul System Overview                  | 30 minutes |
|                  | 11.2 3:1 Inline Block and Tackle      | 30 minutes |
|                  | 11.3 3:1 Attached Block and Tackle    | 30 minutes |
|                  | 11.4 4:1 Inline Block and Tackle      | 30 minutes |
|                  | 11.5 4:1 Double "J"                   | 30 minutes |
|                  | 11.6 5:1 Attached Block and Tackle    | 30 minutes |
|                  | 11.7 4:1 Attached 3 pulley B&T        | 30 minutes |
|                  | 11.8 4:1 Haul Safe System on a Tripod | 30 minutes |

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### **Day 4**

|                  |   |                   |
|------------------|---|-------------------|
| Equipment Review |   | 30 minutes        |
| Knot Practice    |   | 30 minutes        |
| Module 13        | Patient Packaging   | 15 minutes        |
|                  | 13.1 Patient Packaging  | 1 hour            |
| Module 5         | Webbing   |                   |
|                  | 5.2 Hasty Harness   | 15 minutes        |
| Module 14        | High Angle: Lowering to Hauling Operations                        | 1 hour 30 minutes |
| <b>Lunch</b>     |   |                   |
| Module 12        | Low Angle: Lowering Operations                                    | 2 hours           |
| Module 14        | High Angle: Lowering to Hauling Operations and High Angle Descent | 2 hours           |

**Day 5**

|                           |                   |
|---------------------------|-------------------|
| Question and Answer       | 1 hour            |
| Final Exam                | 1 hour 30 minutes |
| Knot Test                 | 1 hour 30 minutes |
| <b>Lunch</b>              |                   |
| Individual Skill Stations | 4 hours           |