University of Illinois Fire Service Institute

Course Syllabus

Course Title: Rope Rescue Technician

Course Duration: 80 Hours

Program: Special Operations Training Program

Course Prerequisites: Rope Rescue Awareness and Operations

Course Description: The scope of this course is to prepare responders to operate as a member of a team within NIMS at an event requiring the need for low- or high-angle rescue at the Technician level. This course provides personnel with the highest level of 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, highline, reeving, and patient packaging. Special consideration will be given to the policies of standard-making agencies such as OSHA, ANSI, NFPA, and others.

Course Requirements:

Pre-Course Work: None
Course Work:

- Attend and participate in 100% of the course.
- Completion of the final exam
- Complete all assigned practical skills.

Post-Course Work: None

Textbook:

The text for this class is *Rope Rescue Principles and Practice* Fifth Edition by Loui McCurley and Tom Vines, Jones & Bartlett Learning. It is a recommended reference, but the student is not required to obtain a copy for the purpose of this class.

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.

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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 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.

> 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: Students will be evaluated with an end of course exam and performance evaluation checklists.

Course Content:

Module: 1
Title: Introduction
Terminal Learning Objective: At the conclusion of this module, the student will explain the purpose of rope rescue operations and the requirements students must fulfill prior to certification at the technician level.

Module: 2
Title: Safety
Terminal Learning Objective: At the conclusion of this module, the student will apply the safety rules to rope rescue operations.

Module: 3
Title: Rope and Knots Review
Terminal Learning Objective: At the conclusion of this module, the student will describe the types of rope, knot construction, and how they may be applied during a rope rescue incident.

Module: 4
Title: Anchors and Rigging Review
Terminal Learning Objective: At the conclusion of this module, the student will construct anchor and haul systems for rope rescue.

Module: 5
Title: Belay
Terminal Learning Objective: At the conclusion of this module, the student will review belay and twin-tension rope systems. (NFPA 1006 5.3.9, 5.3.10, 5.3.11)

Module: 6
Title: Descending
Terminal Learning Objective: At the conclusion of this module, the student will demonstrate the proper methods and techniques for descending a fixed rope. (NFPA 1006 5.3.10)

Module: 7
Title: Malfunctioning Descent Control Device
Terminal Learning Objective: At the conclusion of this module, the student will demonstrate the ability to escape from a jammed or malfunctioning device during a fixed-rope descent in a high-angle environment. (NFPA 1006 5.3.11)

Module: 8
Title: Climb and Traverse Natural Features or Man-Made Structures
Terminal Learning Objective: At the conclusion of this module, the student will construct rigging to climb manmade structures and/or natural features. (NFPA 1006 5.3.7)

Module: 9
Title: Ledge Rescue/Pick Off
Terminal Learning Objective: At the conclusion of this module, the student will direct a team in the operation rescuing a subject from a ledge. (NFPA 1006 5.3.1)

Module: 10
Title: Line Transfer
Terminal Learning Objective: At the conclusion of this module, the student will direct a team in the transfer of a subject suspended on a fixed vertical line or webbing to the student's rope rescue system. (NFPA 1006 5.3.2, 5.3.3)

Module: 11
Title: Ascend a Fixed Rope in a High-Angle Environment
Terminal Learning Objective: At the conclusion of this module, the student will maneuver on a fixed vertical rope. (NFPA 1006 5.3.9)

Module: 12
Title: Knot Passing
Terminal Learning Objective: At the conclusion of this module, the student will operate as part of a team and pass a knot through directional pulleys during both raising and lowering operations while under load.

Module: 13
Title: Litter Tender Operations
Terminal Learning Objective: At the conclusion of this module, the student will perform the activities of a litter tender in a high-angle lowering or raising operation. (NFPA 1006 5.3.4)

Module: 14
Title: Portable High Directional
Terminal Learning Objective: At the conclusion of this module, the student will operate as a member of a team to construct a Portable High Directional anchor.

Module: 15
Title: Highline Construction
Terminal Learning Objective: At the conclusion of this module, the student will participate as a member of a team in the construction of a high-line and direct a team in the operation of a high-line or guiding line system and move a student and rescue litter, with a rescue load (subject), from one point to a predetermined point at a given distance and a specified elevation change. (NFPA 1006 5.3.5, 5.3.6)

Module: 16
Title: Reeving Highline Systems
Terminal Learning Objective: At the conclusion of this module, the student will participate as a member of a team in the construction and direct the operation of a suspended rescue load on a highline system from one point to a predetermined point at a given distance and a specified elevation change.

Module: 17
Title: Crisis at Height
Terminal Learning Objective: At the conclusion of this module, the student will explain the techniques used by rope rescue technicians to interact with a person at height who is in an emotional or psychological crisis. (NFPA 1006 5.3.8)

Reference List:

Rope Rescue Principles and Practice Fifth Edition by Loui McCurley and Tom Vines, Jones & Bartlett Learning

NFPA 1006, Standard for Rescue Technician Professional Qualifications

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Course Schedule

DAY ONE

Event	Duration
Classroom	2 Hours
Receive Personal Protective Equipment and Team Equipment Perform personal and team equipment inventory.	1 ½ Hours
Establish Review Stations (see below). Students will rotate to each station – rotation will resume after lunch.	
Lunch	
Individual Test Stations 1. Knots 2. Anchors 3. Haul Systems	4 Hours

DAY TWO

Event	Duration
Classroom	1 Hour
Lunch will be in between rotation of stations	
Review Station (including PHDs) Station 1: Knots Station 2: Haul Systems Station 3: Anchor Systems Station 4: Portable High Directionals (PHDs) Station 5: Descent Control Devices (DCDs) Station 6: Load Releasing Hitch (LRH) and gripping knots	7 Hours

DAY THREE

Event	Duration
Rappelling: Drill 6.1 and PEC M10 – Descending	4 Hours
Lunch	
Malfunctioning Descent Control Device: Drill 7.1 – Malfunctioning Descent Control Device Exercise PEC M11 – Malfunctioning Descent Control Device	4 hours

DAY FOUR

Event	Duration
Module 17 – Crisis at Height	1/2 Hour
Module 9 – Ledge Rescue Drill 9.1 – Directing a Ledge Rescue	4 Hours
Lunch	
Module 10 – Line Transfer Drill 10.1 – Line Transfer	4 Hours

DAY FIVE

Event	Duration
Module 11 – Ascend a fixed rope in a high-angle environment and convert to a descending system. Drill 11.1 – Ascend a Fixed Rope	4 Hours
Patient Packaging Demonstration	2 Hours
Lunch	
Climb and traverse natural features or man-made structures Drill 8.1 – Climb and traverse features or man-made structures	2 Hours

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DAY SIX

Event	Duration
Module 13 – Litter Tender Operations	8 Hours
Drill 13.1 – Litter Tender Operations & Knot Pass Station	

Rotate Positions, Relocation of Operations, Knot Pass Drill

Lunch

Note: All students must be a Litter Tender at least 2X in a high-angle drill.

DAY SEVEN

Event	Duration
Practice Day: High-line Construction and Operation	8 Hours

Note: The following are examples of possible high-line configurations. Actual construction of various high-line systems will be dependent on location, situation (e.g., weather, time constraints, etc.), and facilities available. Lead Instructor will ensure all relevant NFPA job performance requirements are met.

Ground stations: Each configuration will have three stations: Live End, Dead End, and Carriage System. All strike teams will rotate through each station.

Configuration 1: High-to-High (Horizontal) high-line system with control line and dual track lines with Flying-W tensioning system.

Configuration 2: High-to-Low (Sloping) high-line system with control line and dual track lines with Flying-W tensioning system.

Configuration 3: High-to-High high-line system: twin track lines are a single line with a change of direction, control line and English Reeves System.

Configuration 4: Change carriage system from English Reeves to Norwegian Reeves.

Configuration 5: High-to Low single guiding line for angles less than 45 degrees.

Note: Festoons on long spans High-to-High

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DAY EIGHT

Event	Duration:
High-line Hands-On Practical Day:	8 Hours

Students will participate as a member of a team in the construction of a high-line and direct a team in the operation of high-line or guiding line systems. The objective is to move a student and rescue litter with a rescue load (subject), from one point to a predetermined point at a given distance and specified elevation change.

Configuration 1: High-to-Low (Sloping) high-line system with control line and dual track lines with Flying-W tensioning system or single line change of direction (COD) (depends on location and situation). High directional is to be determined.

Configuration 2: High-to-High (Horizontal) high-line system with control line and dual track lines with Flying-W tensioning system.

Lunch

Rotate positions and continue to construct and direct operations.

DAY NINE

Event	Duration
	8 Hours

Students are to participate as a member of a team in the construction of the highline system.

Students are to direct the operations of the movement.

DAY TEN

Event	Duration
Complete Final Performance Evaluation Checklist (JPRs)	4 hours
Final Scenario dependent on weather, class size, and location	

Lunch

Turn in Student PPE	1 hour
Question and Answer Session	1 hour
Final Exam	2 hours