

Course Outline

COURSE: JFT 112 **DIVISION:** 50 **ALSO LISTED AS:**

TERM EFFECTIVE: Spring 2021 **CURRICULUM APPROVAL DATE:** 12/08/2020

SHORT TITLE: ROPE RESCUE TECHNICIAN

LONG TITLE: Rope Rescue Technician

| <u>Units</u> | <u>Number of Weeks</u> | <u>Type</u> | <u>Contact Hours/Week</u> | <u>Total Contact Hours</u> |
|--------------|------------------------|----------------------------|---------------------------|----------------------------|
| 1 | 18 | Lecture: | .5 | 9 |
| | | Lab: | 1.77 | 31.86 |
| | | Other: | 0 | 0 |
| | | Total: | 2.27 | 40.86 |
| | | Total Learning Hrs: | 58.86 | |

COURSE DESCRIPTION:

This course provides information on high-angle rescue, familiarizing participants with operation of simple, complex, and compound rope rescue systems in the high- angle environment. **PREREQUISITE:** Fire Fighter I or equivalent.

PREREQUISITES:

Completion of JFT 225, as UG, with a grade of P or better.

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

- 02 - Lecture and/or discussion
- 04 - Laboratory/Studio/Activity

STUDENT LEARNING OUTCOMES:

By the end of this course, a student should:

1. Given an anchored fixed-rope system with a simulated malfunctioning descent control device, a system to allow escape from the malfunctioning device, a belay system, a life safety harness worn by the person descending, and PPE, the student will be able to demonstrate the ability to escape from a jammed or malfunctioning device during a fixed rope descent in a high-angle environment, so that the person descending is attached to the fixed rope in a manner that will not allow him or her to fall; the person descending is attached to the rope by means of a descent control device; the means for escape will allow the rescuer to escape either upward or downward from the malfunctioning descent control device; injury potential to the rescuer is minimized; the system will not be stressed to the point of failure; the system is suitable for the site; and the objective is reached.
2. Given a rope rescue system, a specified minimum travel distance for the victim, victim transfer systems, and specialized equipment necessary for the environment, while suspended from a rope rescue system a student will be able to demonstrate the transfer and movement of a victim suspended from rope or webbing in a high-angle environment to a separate rope rescue lowering or raising system, so that risks to victims and rescuers are minimized; undesirable victim movement during the transfer is minimized; the means of attachment to the rope rescue system is maintained; the victim is removed from the static line and lowered or raised to a stable surface; victim positioning is managed to reduce adverse effects associated with suspension-induced injuries; selected specialized equipment facilitates efficient victim movement; and the victim can be transported to the local EMS provider.

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

Curriculum Approval Date: 12/08/2020

LECTURE CONTENT:

I. Rope Rescue Technician (9 hours)

A. Evaluating a Scenario and Constructing Tensioned Anchor Systems

1. System safety factors, critical angles, and force multipliers for a variety of tensioned anchor systems, such as:
 - Pretensioned back ties
 - Front ties
 - Focused floating anchors
2. Types of and uses for a variety of tensioned anchor systems
3. Constructing a variety of tensioned anchors (LAB)

Because of the integrated nature of the lab/lecture method of instruction, the content for both lecture and lab are infused in all subjects.

LAB CONTENT:

II. Rescue Rope Technician

A. Ascending a Fixed Rope (3 hours)

1. Identifying task-specific selection criteria for life safety harnesses and systems for ascending a fixed rope
2. Personal Protective Equipment (PPE) selection criteria
3. Design and intended purpose of ascent control devices utilized
4. Rigging principles
5. Techniques for ascending in high-angle environments
6. Converting ascending systems to descending systems
7. Common hazards posed by harness use
8. Selecting and use of a harness, a system for ascending a fixed rope, and PPE for common environments
9. Attaching the rescuer to the rope rescue system
10. Configure ascent control devices to form a system for ascending a fixed rope

11. Making connections to the ascending system
12. Maneuvering around existing environment and system-specific obstacles
13. Converting the ascending system to a descending system while suspended from the fixed rope
14. Evaluating surroundings for potential hazards

B. Descending a Fixed Rope (3 hours)

1. Identifying task-specific selection criteria for life safety harnesses and systems for descending a fixed rope
2. PPE selection criteria
3. The design, intended purpose, and operation of descent control devices utilized
4. Safe rigging principles and techniques for high-angle environments
5. Common hazards posed by harness use
6. Selecting and use of the harness, a system for descending a fixed rope, and PPE for common environments
7. Attaching the rescuer to the rope rescue system
8. Making the attachment of the descent control device to the rope and life safety harness
9. Operating the descent control device
10. Maneuvering around existing environment and system-specific obstacles
11. Evaluating surroundings for potential hazards

C. Escaping from a Malfunctioning Device (2 hours)

1. Identifying task-specific selection criteria for escape equipment and methods used for escape from a malfunctioning descent control device
2. PPE selection criteria
3. The design, intended purpose, and operation of escape systems utilized
4. Rigging principles
5. Techniques for escaping a jammed device in high-angle environments
6. Common hazards posed by malfunctioning descent control devices
7. Select and use harness, a system for escaping a malfunctioning descent control device, and PPE for common environments
8. Attaching the rescuer to the rope rescue system
9. Making attachment of the descent control device to the rope and life safety harness
10. Attach and operate the escape system to remove the rescuer from the malfunctioning descent control device while maintaining patent attachment to the fixed rope and belay
11. The escape system to maneuver upward or downward from the malfunctioning descent control device
12. Evaluate surroundings for potential hazards

D. Evaluating a Scenario and Constructing and Employing a High-Directional (2 hours)

1. Types of and uses for high-directionals
2. Forces associated with high-directionals
3. The type of high-directional needed for different scenarios
4. Constructing and use a high-directional

E. Directing a Team in Operating a Rope Rescue System to Remove a Stranded Victim (2 hours)

1. System safety check protocol

2. Techniques and systems for safe transfer of stranded victims from a natural or manmade feature
3. Various techniques for handling stranded victims without inducing a fall
4. Reduce hazards for rescuers and victims
5. Condition of the stranded victim
6. Select and construct systems for rapid removal of stranded victims from natural or manmade features
7. Managing operation of the selected system
8. Determining specialized equipment needs for victim movement

F. Directing a Team in Operating a Rope Rescue System to Remove a Suspended Victim (3 hours)

1. System safety check protocol
2. Techniques and systems for safe transfer of suspended victims from an existing anchored rope or webbing to a rope rescue system
3. Various techniques for handling suspended victims
4. Principles of suspension-induced injuries
5. Hazards for rescuers and victims
6. Condition of the suspended victim
7. Select and construct systems for rapid removal of victims from lanyards or rope or webbing
8. Manage operation of the selected system
9. Determine specialized equipment needs for victim movement

G. Performing the Transfer and Movement of a Suspended Victim While Suspended (3 hours)

1. System safety check protocol
2. Task-specific selection criteria for victim transfer systems
3. Various physical and psychological victim management techniques
4. Select PPE
5. Identifying design characteristics and intended purpose of various transfer systems
6. Rigging principles
7. Causes and effects of suspension-induced injuries
8. Identifying methods to minimize common environmental hazards created in high-angle environments
9. Reducing hazards for rescuers and victims
10. Victim transfer systems, select and use PPE
11. Performing a transfer of the victim from a static line to the lowering or raising system
12. Determining specialized equipment needs for victim movement

H. Performing the Activities of a Litter Tender in a High-Angle Operation (3 hours)

1. System safety check protocol
2. Task-specific selection criteria for life safety harnesses
3. Select PPE
4. Variations in litter design and intended purpose
5. High-angle litter attachment principles
6. Techniques and practices for high-angle environments
7. Common hazards imposed by the various structures and terrain
8. Select and use rescuer harness and PPE for common environments
9. Attaching the life safety harness to the rope rescue system
10. Maneuver the litter past obstacles or natural structural features
11. Manage the litter while attached to the rope rescue system

12. Demonstrate tender's vertical positioning independent of litter during transit
13. Evaluate surroundings for potential hazards

I. Participating as a Member of a Team in Constructing a Horizontal Rope Rescue System (3 hours)

1. Determining incident needs as related to operation of a system
2. Describing capabilities and limitations of various systems (including capacity ratings)
3. Methods for limiting excessive force to system components
4. Incident site as related to hazards and obstacle negotiation
5. Rigging principles
6. System safety check protocol
7. Identify common personnel assignments and duties
8. Identify common and critical operational commands
9. Identify common problems and ways to minimize these problems during construction
10. Determine incident needs as related to construction of a system
11. Evaluating an incident site as related to hazards and setup
12. Identifying the obstacles or voids to be negotiated
13. Select a system for defined task
14. Performing system safety checks
15. Use rigging principles that will limit excessive force to system components
16. Communicate with personnel

J. Directing a Team in Operating a Rope Rescue System to Move a Suspended Load Horizontally (3 hours)

1. Determining the incident needs as related to the operation of a system
2. Capabilities and limitations of various systems
3. Incident site as related to hazards and obstacle negotiation
4. System safety check protocol
5. Procedures to evaluate system components for compromised integrity
6. Common personnel assignments and duties
7. Common and critical operational commands
8. Common problems and ways to minimize or manage those problems
9. Ways to increase the efficiency of load movement
10. Determining incident needs
11. Selecting personnel
12. Communicate with personnel
13. Evaluate system components for compromised integrity
14. Perform a system safety check
15. Manage movement of the load
16. Evaluate for any potential problems

K. Climbing and Traversing Using Climbing Aids (2 hours)

1. System safety check protocol
2. Application and limitations of climbing, positioning, and fall prevention systems, including horizontal lifelines
3. Describe the fall factor for and risks associated with different systems used by the AHJ (Authority Having Jurisdiction)
4. Equipment used by the AHJ
5. Perform system safety checks

6. Climb vertical or near-vertical paths using the surfaces provided by the environment or climbing aids used by the agency
7. Transition horizontally between structural elements and the rescue system
8. Use positioning equipment to support the weight of the rescuer in a vertical or nearvertical environment permitting the rescuer to perform a task

L. Interacting with a Person in Emotional or Psychological Crisis (2 hours)

1. System safety check protocol
2. Indicators of a person in emotional crisis
3. Typical triggers that can cause individuals to become agitated or anxious
4. Methods of interacting to prevent harm to the rescuer and the subject
5. Identifying the best practices to deescalate incidents involving persons in crisis
6. Crisis-intervention resources of the AHJ
7. Perform system safety checks
8. Methods of approach that minimize the risk to the rescuer from subjects whose psychological or emotional state is unknown
9. Interview techniques that provide insight to the motives and state of mind of the subject
10. Communicating and interacting with the subject in a manner that does not escalate the incident

METHODS OF INSTRUCTION:

Lecture/Lab

OUT OF CLASS ASSIGNMENTS:

Required Outside Hours: 18

Assignment Description:

Reading Assignments from Rescue Technician Certification Task Book

METHODS OF EVALUATION:

Skill demonstrations

Percent of total grade: 80.00 %

Performance in learning activities, skills and scenarios evaluated by State Fire Training instructor using SFT standards.

Objective examinations

Percent of total grade: 20.00 %

Written Exam to be evaluated by State Fire Training instructor.

REPRESENTATIVE TEXTBOOKS:

State Fire Training . Rescue Technician Certification Task Book /Manual. Sacramento CA : State Fire Training ,2020.

This is provided by State Fire Training

Reading Level of Text, Grade: 12

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

CSU GE:

IGETC:

CSU TRANSFER:

Transferable CSU, effective 202130

UC TRANSFER:

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N

Classification: Y

Noncredit Category: Y

Cooperative Education: N

Program Status: 1 Program Applicable

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department:

CSU Crosswalk Course Number:

Prior to College Level:

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: C

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000620697

Sports/Physical Education Course: N

Taxonomy of Program: 213300