Lassen Community College Course Outline

FS 96 Low Angle Rope Rescue (LARRO) 0.5 Units

I. Catalog Description

A course designed to train firefighters and emergency medical personnel in low angle rescue techniques. Students will learn about equipment, identification, and care. Note: Students must provide their own safety equipment which will include helmet, gloves, long pants, long sleeve shirt, and work boots with aggressive soles for traction on steep slopes. Students may re-enroll in course for credit as legally mandated to meet training requirements as a condition of continued paid or volunteer employment. Material fee required and subject to change. Material fee required and subject to change. A supplemental $81.00 fee will be charged including a $5.00 materials fee for student manual flash drive and a $76.00 State Fire Training FSTEP certification fee is due to Lassen Community College and will be collected at the time of registration.

Diversity Statement:

Our commitment to diversity requires that we strive to eliminate barriers to equity and that we act deliberately to create a safe and inclusive environment where individual and group differences are valued and leveraged for the growth and understanding as an educational community.

Recommended Preparation:

Successful completion of ENGL105 or equivalent multiple measures placement.

Additional Course Information:

Transfer Status: NT
Total Number of Hours by Instructional Method: 27 Hours Lab:
27 Total Student Learning Hours
Scheduled: Spring

II. Coding Information

Repeatability: Not repeatable
Grading Option: Graded
Credit Type: Credit-Degree Applicable
TOP Code: 213300

III. Course Objectives

A. Course Student Learning Outcomes

Upon successful completion of the course the student will be able to:

1. Demonstrate the appropriate use selected rescue equipment.
2. Tie, within one minute and blindfolded, the following knots: -
    a. Figure eight on a bite
    b. Figure eight follow through
    c. Water knot (double overhand bend)
    d. Figure eight
3. Identify and explain hazard and minimum safety precaution for rescuers in steep or vertical terrain

4. Explain, demonstrate and operate various haul systems to raise and lower people, equipment and patients in the safest possible manner.

B. Course Objectives

Upon completion of this course the student will be able to:

1. Tie, within one minute and blindfolded, the following knots: -
   E. Figure eight on a bite
   F. Figure eight follow through
   G. Water knot (double overhand bend)
   H. Figure eight
2. Explain and demonstrate the use of each knot with.
3. Demonstrate proper and safe techniques in rigging various friction devices, repelling 100 feet in four minutes.
4. Identify and explain hazard and minimum safety precaution for rescuers in steep or vertical terrain.
5. Rig various litters for vertical lift with attachments for at least one rescuer to remain with the patient, within five minutes.
6. Secure patients to a Stokes basket for safe horizontal transport within eight minutes.
7. Demonstrate safe and proper techniques for stokes basket management on steep grades.
8. Set safe anchors using natural objects, man-made objects, using vehicles and improvised anchors.
9. Demonstrate "route finding" techniques that maintains maximum safety for the rescuers and victims.
10. Demonstrate safe and proper upper belay techniques and rope management for a rescuer descending or ascending hazardous terrain.
11. Demonstrate and explain the following terms: -
    a. On belay
    b. Belay on
    c. Testing
    d. Test
    e. Repelling
    f. Rappel on
    g. Off rappel
    h. Climbing
    i. Climb on
    j. Tension
    k. Slack
    l. Up rope
    m. Off belay
    n. Belay off
    o. Haul system on
    p. Hauling
    q. Haul away
    r. Hold Rock!!
    s. Falling!!
    t. Rope
12. Explain the difference between a dynamic and static belay, the dangers of a dynamic belay, and the standard procedures in a belay rescue and reasons for it.

13. Explain, demonstrate and operate various haul systems to raise and lower people, equipment and patients in the safest possible manner.
14. Identify kernmantle rope.
15. Identify laid rope.
16. Explain and demonstrate the proper care of ropes, carabineer slings, ascending devices, and other related equipment.
17. Explain and demonstrate the care and storage procedures for rope and associated climbing gear for rescue.

IV. Course Content

A. Introduction
    1. Rescuer and Victim Safety

B. Personal Protective Equipment

C. Rope Rescue and Related Equipment
    1. Types and Characteristics of Ropes
    2. Webbing and Its Application
    3. Carabineers and Their Application
    4. Friction Devices and Their Uses
        1. Figure Eight
        2. Using Carabineers
        3. Litters and Baskets

D. Rescue Knots and Hitches
    1. How to:
        1. Tie a Figure Eight Stopper
        2. Tie a Figure Eight and a Bite
        3. Tie an Overhand Knot
        4. Tie an Overhand Bend
        5. Tie a Round Turn with Two Half Hitches
        6. Attach a Three Wrap Prusik Hitch
        7. Tie a Figure Eight Follow Through
        8. Tie a Figure Eight Bend
        9. Tie a Double Overhand Bend
        10. Form a Clove Hitch
        11. Tie a Double Overhand on a Bight
        12. Form a Tensionless Hitch

E. Anchor Systems
    1. How to:
        1. Form a Girth Hitch
        2. Form a Basket Sling
        3. Form an Anchor Sling
        4. Construct a Self-adjusting Anchor System
        5. Construct a Windlass

F. Rescuer and Victim Packaging
    1. How to:
        1. Don a Class II Harness
        2. Package a Victim in a Commercial Victim Harness
        3. Package a Victim in a Hasty Pelvic Harness
        4. How to secure a Victim to a Rescue Litter

G. Components of a Rope Rescue System

1. System Attachments and Fall Restraint
2. How to:
    1. Attach a Rescuer to a Rope Rescue System
    2. Attach an Ambulatory Victim to a Rope Rescue System
    3. Attach a Litter to a Rope Rescue System
    4. How to Attach a Rescuer to a Fall Restraint System
3. Main Components of a Rope Rescue System and How to Construct and Operate
    1. Belay/Safety
    2. Main Line
    3. Mechanical Advantage
    4. Dual RPM System

H. Descending and Ascending Techniques
1. How to:
    1. Construct a Fixed Line for a Rappel
    2. Reeve a Figure Eight Descender
    3. Reeve a Brake Bar Rack
    4. Rappel and Lock-off
    5. Ascend a Fixed Line
    6. Escape Jammed Friction Devices

I. Lower/Raise Systems
1. How to:
    1. Convert a Lowering System to a Raising System
    2. Operate a Lowering System
    3. Construct Mechanical Advantage Systems
    4. Construct a Pig Rig

J. Load-releasing Methods
K. Rescue Scene Organization and Management
1. Introduction
2. Command and Control
3. ICS and Rope Rescue Operations
4. Rope Rescue Position Descriptions

L. Litter Walkouts (Optional)
M. Ladder Systems (Optional)
N. Evolutions

V. Assignments

A. Appropriate Readings
NA

B. Writing Assignments
NA

C. Expected Outside Assignments
Students will be required to complete two hours of outside-of-class homework for each hour of lecture

D. Specific Assignments that Demonstrate Critical Thinking
The student, acting as a group leader, will analyze a field training exercise, select and set up a low angle rope rescue system, and employ the system to rescue a victim.

VI. Methods of Evaluation

Traditional Evaluation

Term paper (topic choice, thesis statement, outline, bibliography, rough draft, final draft), homework, classroom discussion, essay, journals, lab demonstrations and activities, multiple choice quizzes, and participation. Demonstrations in the field. Comprehensive final exam.

VII. Methods of Delivery

Check those delivery methods for which this course has been separately approved by the Curriculum/Academic Standards Committee.

☒ **Traditional Classroom Delivery** ☐ Correspondence Delivery

☐ Hybrid Delivery ☐ Online Delivery

Traditional Classroom Delivery

Lecture, discussion, audio/visual aids, demonstration, group exercises, guest speakers, lab, individualized programs and other as needed.

VIII. Representative Texts and Supplies

California State Fire Training. Low Angle Rope Rescue Operational Student Manual. California State Fire Training, 01-01-2007.
James Frank and J.B. Smith. CMC Rescue Manual,6th ed. Santa Barbara; CMC Rescue, Inc. Available online at CMCpro.com

IX. Course Status

1. Current Status: Active
2. Original Approval Date: 05/15/2018
3. Course Originator:
4. Board Approval: 06/12/2018
5. Chancellor's Office Approval Date: 06/13/2018
6. Revised By: Dan Weaver
7. Latest Curriculum/Academic Standards Committee Revision Date: 09/03/2024