

# FIRE 0638 - LOW ANGLE ROPE RESCUE OPERATIONAL

## Catalog Description

Hours: 24 (8 lecture, 16 laboratory)

Description: Designed to equip the student with the techniques and methods for using rope, webbing, hardware friction devices and litters in low angle rescue situations. Areas covered include rope and related equipment, anchor systems, safety lines, stretcher lashing and rigging, mechanical advantage systems and single and two line rescue systems. (not transferable) (not degree applicable) (pass/no pass grading)

## Course Student Learning Outcomes

- CSLO #1: Describe the conditions of a typical low angle rope rescue incident.
- CSLO #2: Compare and contrast the different types of low angle rope rescue situations and the hazards associated with them.
- CSLO #3: Explain the process and reasons for conducting a post incident critique and debriefing.

## Effective Term

Fall 2019

## Course Type

Credit - Nondegree-applicable

## Contact Hours

24

## Outside of Class Hours

16

## Total Student Learning Hours

40

## Course Objectives

Lecture Objectives:

1. Analyze the conditions of a typical low angle rope rescue incident;
2. Assess the effects of personnel, equipment and environment on a low angle rope rescue;
3. Analyze four considerations for the selection of anchors;
4. Develop examples of rescue situations that require the forming of picket holdfasts;
5. Compare and contrast the different types of low angle rope rescue situations and the hazards associated with them;
6. Evaluate the use of a safety line using one and two anchor points with opposing carabineers; and
7. Evaluate the use of a group discussion for a post incident critique and debriefing.

Laboratory Objectives:

1. Recognize rescue ropes and related equipment and identify their use;
2. Compare the three major types of stretcher construction and the maintenance and inspection considerations of each;

3. Discuss and identify the purpose of anchors and provide examples of the two basic categories of anchors;
4. Practice and demonstrate the different types of stretcher lashing and riggings;
5. Differentiate between multiple point anchors, load sharing and load equalizing anchors, and two and three point load equalizing anchors;
6. Demonstrate the tying and construction of various knots, anchor slings, and brake systems;
7. Construct and use a safety line;
8. Demonstrate rescuer packaging and rappelling techniques;
9. Design, construct and operate a lowering system with a safety line;
10. Construct and operate a lowering system with a safety line to lower three people attached to a low angle pre-rig while holding a basket type stretcher; and
11. Demonstrate how to assemble and use a moving ladder to lower and raise a person.

## General Education Information

- Approved College Associate Degree GE Applicability
- CSU GE Applicability (Recommended-requires CSU approval)
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

## Articulation Information

- Not Transferable

## Methods of Evaluation

- Objective Examinations
  - Example: 1. Students will take a multiple-choice examination on rescue rope. Standard Grading. Example question: Which knowledge and/or skills will the rope rescue team need to operate effectively? A. Rope rescue techniques, B. Vehicle rescue hazard awareness, C. Water rescue skills, D. Both A and B.
- Skill Demonstrations
  - Example: 1. The student will construct and operate a z-rig mechanical advantage system. Grade based on Industry Standard. 2. The student will tie a hasty harness to him/herself and to another person/victim. Grade based on Industry Standard.

## Repeatable

No

## Methods of Instruction

- Laboratory
- Lecture/Discussion

Lab:

1. The instructor will demonstrate how to build a 5:1 mechanical advantage Piggy Back System and then the students will work with an assigned group and build an identical system.

Lecture:

1. The instructor will lead a discussion of rescuer injuries and fatalities. Students will work in small groups to identify common mistakes that led to the injuries and deaths and present their conclusions to the class.

## Typical Out of Class Assignments

### Reading Assignments

1. The student will read the material on mechanical advantage systems and then they will make a list of the components necessary to construct a 3:1 z-rig. 2. The student will read the material in the textbook on ropes and will then develop an outline of a policy on the care and maintenance of rescue rope.

### Writing, Problem Solving or Performance

1. The student will list all of the components needed to construct an RPM. After the instructor has verified the list is complete, the student will draw a diagram of an RPM and the correct positioning of the components. 2. The student will construct a lowering and raising system using only the equipment in a light rescue cache.

### Other (Term projects, research papers, portfolios, etc.)

### Required Materials

- Low Angle Rope Rescue Operations Student Manual
  - Author: California State Fire Training
  - Publisher: State of California
  - Publication Date: 2007
  - Text Edition:
  - Classic Textbook?:
  - OER Link:
  - OER:
- Fundamentals Technical Rescue
  - Author: International Association of Fire Chiefs and National Fire Protection Association
  - Publisher: Jones and Bartlett Learning
  - Publication Date: 2010
  - Text Edition: 1st
  - Classic Textbook?:
  - OER Link:
  - OER:
- Fundamentals of Fire Fighter Skills
  - Author: International Association of Fire Chiefs and National Fire Protection Association
  - Publisher: Jones and Bartlett Learning
  - Publication Date: 2017
  - Text Edition: 3rd
  - Classic Textbook?:
  - OER Link:
  - OER:

### Other materials and-or supplies required of students that contribute to the cost of the course.