

# FIRE 0650 - RESCUE SYSTEMS I

## Catalog Description

Prerequisite: Completion of FIRE 638 with grade of "C" or better or completion of a State Fire Marshal approved Low Angle Rope Rescue Operational course

Hours: 40 (21 lecture, 19 laboratory)

Description: Rescue systems, ropes and related equipment, heavy object operations, breaking and breaching operations, ladder rescues, and emergency shoring. Required for CA Urban Search and Rescue basic and light operational level training. (not transferable) (not degree applicable) (pass/no pass grading)

## Course Student Learning Outcomes

- CSLO #1: Explain California Urban Search and Rescue requirements.
- CSLO #2: Describe how to lift and move heavy objects.
- CSLO #3: Explain breaking and breaching, and various shoring methods.
- CSLO #4: Describe ladder rescue systems.

## Effective Term

Fall 2019

## Course Type

Credit - Nondegree-applicable

## Contact Hours

40

## Outside of Class Hours

42

## Total Student Learning Hours

82

## Course Objectives

Lecture Objectives:

1. Examine rescue scene planning, organization and management;
2. Identify Urban Search And Rescue (USAR) standards, mandates and regulations;
3. Evaluate rescuer safety practices in USAR operations;
4. Recognize USAR terminology, procedures and resources;
5. Describe how to safely and effectively use rescue litters and harness systems;
6. Discuss the operation of lowering and raising systems;
7. Explain types and uses of levers, cribbing, wedges and rollers;
8. Evaluate heavy object rescue principles/techniques;
9. Discuss breaking and breaching operations; and
10. Evaluate methods of emergency shoring.

Laboratory Objectives:

1. Construct a variety of rescue rope and rescue systems;
2. Construct and properly utilize and operate the Rack Pulley Mariner's Hitch;

3. Design, construct and operate a belay system;
4. Examine different ways to rappel;
5. Design, construct and operate low angle rescue systems;
6. Examine proper construction and techniques for employing ladder rescue systems; and
7. Identify basic tools and equipment used in emergency shoring operations.

## 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

### Methods of Evaluation

- Objective Examinations
  - Example: Students will take a multiple-choice examination on confined space hazards. Standard Grading. Example Question: What are the potential hazards within a confined space? A. Hazardous atmosphere, B. Limited space for making entry, C. Energy Sources, D. All of the above.
- Problem Solving Examinations
  - Example: Students will be required to solve rescue situation problems. Example: A tornado has passed through your response district without warning. In its wake, your truck company is dispatched to a report of a house collapse with report of people trapped. Along with your truck company, two engine companies, a rescue company, an ALS medical unit, and a chief officer have been dispatched. Questions: 1. What are some of the approach hazards you might encounter? 2. What are the potential hazards that might be present upon your arrival? 3. Which actions can you take prior to the arrival of the collapse rescue team?
- Skill Demonstrations
  - Example: Students will demonstrate the proper lashing of a victim into a rescue litter for being raised by a ladder gin. Pass/Fail grading based on industry standard.

## Repeatable

No

## Methods of Instruction

- Laboratory
- Lecture/Discussion

Lab:

1. The instructor will demonstrate the proper technique of using a ladder as a gin against a vehicle. Students will then work in small groups to construct a ladder gin against a vehicle.
2. The instructor will lecture and demonstrate correct procedures for rappelling. Students will then practice correct rappelling procedures.

Lecture:

1. The instructor will lecture on Urban Search And Rescue (USAR) standards, mandates and regulations. Students are to actively

participate in the lecture and prepare a list of search and rescue mandates and standards

## Typical Out of Class Assignments

### Reading Assignments

1. The student will read the chapter on Ropes & Systems, and be prepared to discuss various uses of each knot. 2. The student will read the material in the text on mechanical advantage, and create a list of rescue tools that can be used to create a mechanical advantage.

### Writing, Problem Solving or Performance

1. The student will create an organizational diagram of all of the necessary job assignments to facilitate a search and rescue operation in a collapsed building. 2. The student will create a lifting system that has a 2-to-1 mechanical advantage using the materials provided.

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

### Required Materials

- Rescue Systems 1, Student Manual
  - Author: California Department of Forestry
  - Publisher: State of California
  - Publication Date: 2009
  - Text Edition: 4th
  - Classic Textbook?:
  - OER Link:
  - OER:
- Fundamentals of Technical Rescue
  - Author: International Association of Fire Chiefs and National Fire Protection Association
  - Publisher: Jones and Bartlett Learning
  - Publication Date: 2010
  - Text Edition:
  - Classic Textbook?:
  - OER Link:
  - OER:
- Fundamentals of Fire Service 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.

Instructor prepared handouts.