

**RESCUE
TRAINING****Rescue Technician > Advanced Training**
Advanced Rigging Concepts

This *three-day* program provides rescue teams and team members with the skills and knowledge needed to operate at a technician level as defined by NFPA 1670 and 1006. This class provides an advanced study on knots, anchor construction, and mechanical advantage. Students will understand the physical principles which underlie the use of rope rescue systems.

Pre-requisites: Students who attend this class must have basic rope skills including knot-tying, constructing anchors, and operating mainlines and belay lines.

Course Outline**Principles of Rope Systems**

- Knots, Anchors, Mechanical Advantage
- Mainline, Belay Review

Force Calculations

- Vector Analysis
- Safety Factors
- Compression and Tension

Knotcraft

- Key Definitions and Physics
- Knots, Bends, Hitches
- Forces and Knots

Anchor Setup

- Anchor Theory, Resultant Forces
- Single- and Multi-point Anchors
- Tensioning and Back-Tying

Mainline System Setup and Operation

- Brake Racks
- Changeovers
- Mechanical Advantage

Belay System Setup and Operation

- Tandem Prusik Belay
- Load-releasing Hitches

Twin Rope Systems**Training Objectives**

At the completion of this class, the students should be able to:

1. Describe the physical principles which underlie knots, anchors and mechanical advantage.
2. Tie all knots, bends, and hitches required in rescue systems and instruct others on proper knot-tying technique.
3. Construct a variety of anchors that can accept the expected loads and maintain safety ratios.
4. Setup and operate mainlines and perform loaded/unloaded changeovers, knot-passing, and operation of descent devices.
5. Setup and operate both system/and individual belays using tandem prusiks and manufactured belay systems.
6. Assess the proper role and application of twin rope systems (loads on both ropes).

Other Programs in this Series:

Managing the Rescue Incident: Two Days

Elevated Anchors: Three Days

Force Multipliers- Rope Physics: Three Days

Confined Space Rescue Technician: Four Days

Advanced Horizontal Rope Systems: Five Days