



Mountaineering Activities, Topics and Skills

Introduction

The Outdoor Adventure mountaineering programs are designed to provide a progression that address's the combination of activities commonly referred to as mountaineering. We suggest that mountaineering is not a standalone set of techniques in the same sense that rock climbing is. Rather, it describes the mind set of participants and the environment where the activity takes place. Mountaineering is "big feature" oriented, typically summit but also significant mountain features such as arêtes, pinnacles or gendarmes.

The mountaineering progression provides participants first with a basic skill set that supports further participation in increasingly technically advanced skills. No particular skill set is viewed as more important than another – all are important to the mountaineer.

The philosophy behind the design is that participants have the opportunity to learn the skills listed within each activity. Experiences are designed with learning outcomes as the priority. Activities are not particularly strenuous, they are not anymore physically demanding than is necessary to practice the skills. Also, climbing a mountain or "summiting" something is not generally included in the outcomes.

Warning:

Mountain climbing, like other adventure sports, is dangerous. Although the number one priority of every Outdoor Adventure outing is safety there are risks associated with mountain climbing. These risks include but are not limited to minor injuries such as abrasions, strains and sprains too more serious injuries such as broken bones, head injuries and even death.

The Mountaineering Activities

The activities within the broad understanding of mountaineering include seasonal camping, seasonal bivouac, technical skills, seasonal backcountry travel, technical skills, rock climbing, ice climbing and travel in avalanche terrain. Other topics not included within this mountaineering progression but also important include orienteering (map and compass) GPS, altimeter use, leave no trace, first aid and other.

Mountaineering Topics and Skills

Each of the activities above includes a set of topics. Each topic is further broken into skills, where appropriate.

Each of these activities (**bold type**) and the topics included are listed below.

Camping (winter and summer are separate activities)

Gear

Menu planning

Site selection

Set up

Cooking

Backcountry Travel (winter and summer are separate activities)

Gear (hiking, snowshoeing, skiing)

Techniques



Food considerations

Speed considerations

Time considerations

Bivouac (winter and summer are separate activities)

Gear

Site selection

Planned and unplanned

Shelters

Roped Mountaineering (third class to easy fifth class)

Gear

Knots

Rappelling

Belaying

Simul-climbing

Rock Climbing - Rock I, II and III (fifth class)

Gear

Knots

Belaying

Anchoring

Lead climbing

Rappelling

Climbing techniques

Ice Climbing

Gear

Knots

Anchors

Belaying

French technique

Front point technique

Tooling

Leading

Travel in Avalanche Terrain

Avalanche terrain

Forecasting

Survival

Rescue

Route selection

Mountaineering Activities, Topics and Skills

Topic: Winter Bivouac

Exposure to winter conditions at high altitude can be deadly. A planned bivouac (bivi) can be safe and even quite comfortable, however. Decisions and plans contribute to forced bivi's including start time, turnaround time and continuing in bad conditions.



The following is a list of skills included in planned and forced bivi situations:

Gear for winter bivis

Sleeping bag

Bivi sack

Tent

Layers

Sleeping pad

How we lose heat and what prevents it

Convection – wind barrier

Conduction - insulation

Respiration – not much to do

Radiation – reflective layer

Evaporative – stay dry, VBL

Avoiding a forced bivi

Impromptu shelters

Snow cave

Wind break

Low lying areas v ridges

Lee slopes

Survival and rescue

Best practices to keep warm

Personal beacons

Fire

Survival kits

Reading:

The Freedom of The Hills

Into Thin Air



Topic: Roped Mountaineering

Rope techniques in mountaineering tend to be less reliant on mechanical systems. Instead they are reliant on natural features, human strength, body weight and technique making them potentially more prone toward human error.

The following is a list of skills included in roped mountaineering

Gear for rock and snow (non-winter and non-glacial)

Rope

Slings

Prussic

Karabiners

Harness's

Chocks

Ice ax

Snow anchors

Anchoring - rock

Using chock stones

Knots as chocks

"Store bought"

Pitons

Fixed

Anchoring – snow (non-winter and non-glacial)

Bollard

Deadman

Picket

Fluke

Belaying - rock

Hip belay

Running belay

Simul-climbing

Signals – "On belay", etc...

Belaying – snow (non-winter and non-glacial)

Boot ax belay

Rappelling

Length

Dulfersitz

With gear

Retrieving the rope

Signals – "Off rappel"

Reading:

The Freedom of The Hills



Topic: Technical Rock

Mountain climbing routes often include technical rock and ice climbing. We teach these techniques within our regular rock and ice climbing activities. OA offers a multi day intensive ice climbing course in Ouray each January. Please check the schedule for dates.

OA Rock Climbing Outline

Is transportation included? Yes

What time? 8:00 AM to 3:00 PM.

Where do we meet? East entrance PER building - parking lot.

What's included? Everything you need except personal gear.

What do I need to bring? Water, lunch and snack, day pack, light hikers or tennis shoes, jacket, sweater, shorts if it's hot, long pants for cool weather, camera, climbing gear that you have, sun glasses and sun screen. If you think you might need or want something – bring it!

Can I bring a friend? Guests (non-students) are welcome but they must be registered and pay the additional \$5 guest fee (\$30 total).

Rock shoes are included! We will bring rock shoes and fit them the day of the outing.

Rock Outing Descriptions:

Introduction to Rock Climbing I

On this one day outing to Table Mountain in Golden we will introduce you to the basic and fundamental techniques that every rock climber uses every time she goes climbing. The techniques include tying in to the rope, belaying and climbing techniques. Issues of leadership and safety in the outdoors are an integral part of this experience. Communication, cooperation and support are key to a successful rock climbing experience.

Introduction to Rock Climbing II

After reviewing level I material, we will focus on anchor placement, setting up top rope belays, repelling, belaying and more climbing techniques.

Rock Climbing III

We will offer you an opportunity to push your climbing abilities to their limit and beyond (ratings will range from 5.7 to 5.11). We will focus on pure technical free climbing skills and techniques in a safe, top roped environment. Instructors will be on hand to provide safety and advanced technique instruction.

Advanced Rock Climbing Techniques

When it comes to rock climbing techniques, learning never really stops. Perhaps you have been climbing for a while and would like to move to the next level. Maybe you want to start lead climbing, learn traditional techniques, learn aid climbing or start climbing multi-pitch routes. If this interests you, please get in touch with the OA department so we can begin planning an experience based on your needs.

Rock Climbing - Lead Climbing Techniques - Semiprivate Instruction

Scheduled by arrangement, call 303 556-8363

Following a review of techniques we will spend the day practicing placing protection, discussing lead techniques and either doing a mock lead of a one pitch route where the leader is top roped or we will do a multi-pitch route (depending on your interests).



Important Info:

Please keep in mind that one cannot become proficient in the safety techniques that are integral to safe participation in rock climbing in one day. Further instruction is recommended for those who wish to pursue the sport beyond this introductory level.

Topic: Technical Ice

Mountain climbing routes often include technical rock and ice climbing. We teach these techniques within our regular rock and ice climbing activities. OA offers a multi day intensive ice climbing course in Ouray each January. Please check the schedule for dates.

Ice Climbing Info

Is transportation included? No, we will meet at the trailhead. ***Check with us, however*** - if you need a ride, we might be able to provide one

What time? 8:00 AM to 3:00 PM

Where do we meet? East entrance PER building parking lot or at the climbing area

Where will we climb? To be determined, based on conditions

What's included? Helmets, harnesses, ice tools, ice screws, climbing hardware, ropes and crampons. We can provide a fleece layer or jacket, if needed

What do I need to bring? A liter of water, lunch and snack, day pack, hiking boots, non-cotton warm layers including: jacket, sweater, nylon shell pants, gloves and hats and other cold weather gear plus extra layers, camera, climbing gear that you have, sun glasses and sun screen. If you think you might need or want something – bring it!

Can I bring a friend? Guests (non-students) are welcome but they must be registered and pay the additional \$5 guest fee for each day.

We are unable to provide boots - Good hiking boots are fine to learn to ice climb. If you would like to rent ice climbing boots, Bent gate Mountaineering is a good place.

Ice Climbing Outline:

Day one:

Meeting times and places: To be arranged

Safety Practices

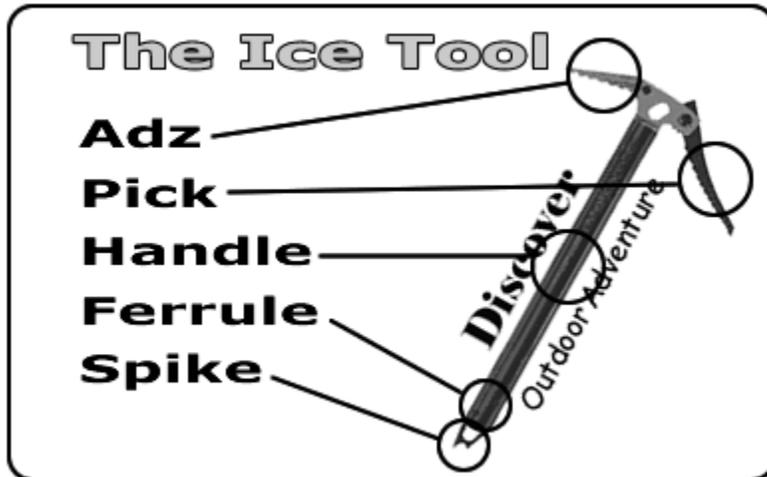
Helmet use

Stay away from base

Double check - have someone else check knots

Gear Intro

Ice Tools:



Crampons

Assign and fit

Screws

Ropes

Rock anchors

Clothing

Philosophy

Low impact

Process verses product

Grading and difficulty

Grade 1 through 6

Ice rating - WI 1 through 7

Climbing

Knot instruction: Retraced figure eight

and ½ a double fisherman's knot instruction

Top rope belay instruction

Rope-up and climb



Instruction is on-going

Technique demo: French technique & Front point technique

Day Two

Setting anchors on ice falls:

Gear

Load Sharing and directional considerations

Multiple anchors

Anchor evaluation

Lead climbing demonstration and discussion:

Equipment placement

Run-outs

Lead fall discussion and no fall ethic in ice climbing

Following and cleaning gear

Set top rope and climb

Belay instruction

Upon completion of climbing:

Anchor removal

Rope coiling demonstration

Process activities

Evaluation

Clear Creek Ice

From Boulder:
Take 93 South from Boulder to Route 6.
Turn Left and follow route 6 up Clear Creek Canyon for 4.5 Miles and park on the South (LEFT) side of the highway.

From Denver:
Take I-70 West to West bound State Highway 58.
Follow State Highway 58 as it enters Clear Creek Canyon and turns into route 6. Follow Route 6 up Clear Creek Canyon for 4.5 Miles and park on the South (LEFT) side of the highway.
Coming From the South? Use 93 or Colfax to Route 6

The map shows a topographic view of Clear Creek Canyon. A red line traces the route from the canyon mouth up towards Mount Zion. Key landmarks include Canyon, Clear Creek, and Mount Zion. Highway 58 and Highway 93 are marked with red circles. A red arrow points north towards Boulder. The map also shows contour lines and other geographical features like Guich and Clear Creek.



From Boulder:

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Follow State Highway 58 as it enters Clear Creek Canyon and turns into route 6. Follow Route 6 up Clear Creek Canyon for ## Miles and park on the South (LEFT) side of the highway.

Coming From the South? Use 93 or Colfax to Route 6

Topic: Travel in Avalanche Terrain

This is taught as a regular part of the Outdoor Program schedule. Please check the schedule for dates.