Mountaineering Activities, Topics and Skills

Introduction
Mountaineering

The Outdoor Adventure mountaineering programs are 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 mindset 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 a participant with a basic skill set that supports further participation in increasingly technically advanced skills. No particular skill set is more important than another is – 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 (i.e. learning outcomes are the priority). Activities are not particularly strenuous, they are not anymore physically demanding than is necessary to learning and practicing the skills. Consequently, 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 Activities, Topics and Skills
Each of the activities above includes a set of topics. Each topic is further broken into skills, where appropriate. Find each of these activities (bold type) and the topics included on the following pages.
Mountaineering Activities, Topics and Skills

**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
Mountaineering Activities, Topics and Skills

Travel in Avalanche Terrain
Avalanche terrain
Forecasting
Survival
Rescue
Route selection

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 bivis 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
- Windbreak
- 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
Mountaineering Activities, Topics and Skills

**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
- Dead man
- 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
- Dulferstz
- With gear
- Retrieving the rope
- Signals – “Off rappel”

**Reading:**

The Freedom of the Hills
Mountaineering Activities, Topics and Skills

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.

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 encouraged for those who wish to pursue the sport beyond this introductory level.
Mountaineering Activities, Topics and Skills

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 is 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
Mountaineering Activities, Topics and Skills

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 icefalls:
Mountaineering Activities, Topics and Skills

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

From Boulder:
Take 93 South form Boulder to Route 6.
Mountaineering Activities, Topics and Skills
Turn Left and follow route 6 up Clear Creek Canyon for ## 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 ## Miles and park on the South (LEFT) side of the highway.
If you are coming From the south, Use 93 or Colfax to Route 6

Topic: Travel in Avalanche Terrain
This topic is part of the Outdoor Program winter program. Please check the schedule for dates. Click for more info...