LECTURE #1

Lecture 1 Topics
Course Introduction
Conservation Activities, Essential and Critical skills
Equipment and Clothing, 10 Essential Systems
Safety and First Aid (WFA)
Conditioning and Nutrition
Knots

This reading and quiz is DUE at Lecture 1

Mountaineering: The Freedom of the Hills (9th Edition) (FOTH)

Subject	
First Steps	Ch 1, all
Clothing and Equipment	Ch 2, all
Water and Nutrition	Ch 3, pp 70-78
Conditioning	Ch 4, all
Knots, Helmets, Harnesses and Carabiners	Ch 9, pp 154-171
Safety	Ch 23, all
First Aid	Ch 24, all

Read Tacoma Alpine Scrambling Course Student Guide (TASCSG) and Lecture #1 Material on the Course website under blue tab for Course Materials

- Rock Scramble Difficulty Levels **not the same as Mountaineer classifications**
- **Food for Fuel - hikers sports nutrition, excellent Brenda L, Braaten, PhD., R.D**
- **Pack Light, Eat Right Brenda L, Braaten, PhD., R.D.**
- Animated instruction on knot tying has links to apps, too

ALPINE SCRAMBLES COURSE GENERAL INFORMATION

The Alpine Scrambles Course is for adventurers who want to travel beyond the trails, but do not desire to indulge in technical climbing. It also serves as an introduction to climbing fundamentals for those wishing to go on to learn technical climbing in courses such as Basic Rock and the Glacier Climbing Course. Alpine scrambles are off-trail activities with a mountain peak as the destination. These scrambles are more challenging than hikes, but generally do not require technical techniques such as belaying, setting anchors, or activities requiring a climbing harness and rope.

The rugged terrain and exhilarating views of most NW summits are often accessible by scramble routes. The Alpine Scrambles Course is a program offering comprehensive instruction in non-technical (un-roped) climbing to promote your ability to travel to and from these locations safely. The course provides instruction for off-trail travel and is a guide to safe scrambling amongst our wondrous variety of mountain summits.

Scrambles are typically strenuous, generally over rock and snow, and through brush. The course is very demanding physically, mentally, and emotionally. Occasionally, it is also hazardous, as well as time-consuming. However, the rewards are *many*.

By successfully completing the Alpine Scrambles Course, participants will learn about:

- **Equipment, clothing**
- **Conditioning needed for comfort and safety**
- **Rock and off-trail scrambling techniques**
- **Avalanche awareness and avoidance**
- **Mountain weather awareness**
- **Wilderness ethics**
- **Ice axe use and snow travel skills**

Mandatory Requirements for Graduation:

1. **Successfully complete a conditioner hike. NOTE It is a requirement before the Overnight Field Trip.**

2. **Attend all lectures & submit homework (arrangements can be made with instructors if a lecture must be missed).**

3. **Attend all field trips (discuss alternatives for missed field trip with the instructors).**

4. **Pass the final exam.**

5. **Complete three Mountaineers led alpine scrambles (1 snow, 1 rock, 1 either). When applying for graduation, please list the scrambles and dates.**

   These 4 badges must be current as of date of graduation

6. **Being an Outdoor Ambassador and Learning Low Impact Recreation Skills badge.**

7. **Mountaineers Navigation Class badge.**

8. **Graduate from Mountaineers approved Wilderness First Aid or equivalent.**

9. **Earn the Stewardship Credit Badge check Washington Trails Assoc. , MRNP Volunteer**

When you have completed all these requirements submit the Completed Graduation Application Form to Sue Giblin sisulady@outlook.com

To receive your Certificate at this year's October Graduation potluck submit at least 7 days prior to that date.

RULES, GUIDELINES, AND REQUIREMENTS

LECTURES

All lectures are held at the Tacoma Mountaineer Program Center (2302 North 30th Street, Tacoma, WA 98403). Lectures begin at 7:00 PM SHARP and end at 9:00 PM.

Arrive at class by 6:45 PM to help set up tables and chairs, collect class handouts, sign-up for field trips, and ask questions. Please. . . Be On Time. After class, help put away tables and chairs.

REQUIRED READING/BEING PREPARED

Readings are assigned from Mountaineering: The Freedom of the Hills (9th Edition) (FOTH), and the *Tacoma Alpine Scrambles Lecture package* are required as preparation for each lecture and field trip. Attending the lectures and field trips fully prepared will maximize your enjoyment and understanding of the course. Poor preparation prior to a lecture will reduce your ability to receive the full benefit of the lecture. Poor preparation prior to field trips can be a safety concern and may place others in jeopardy.

Field trips require a full day and are held *regardless* of weather. They are conducted for the purpose of giving you the opportunity to practice the techniques learned from the lectures and text. Know what you are expected to accomplish. Study the topics and be prepared to aggressively practice the skills being taught and reinforced. A successful field trip is your responsibility. You must be prepared for conditions that might be encountered.

ATTENDANCE

This course takes fundamental techniques and builds upon them as the course progresses. Certain lectures are prerequisites for corresponding field trips. On field trips you will first practice essential and critical skills, then demonstrate your mastery of these skills. Demonstrating mastery of these skills is required to sign-up for scrambles. Because of this, attendance is required at all lectures and all field trips.

The Rules:

1. **Attendance at lectures is mandatory prior to participation in field trips.**
2. **Attendance on field trips is also mandatory for participation in certain subsequent field trips and scrambles.**
3. **Make-ups for field trips are not generally conducted. If you must miss a field trip, contact the Field Trip Coordinators or course Chair for possible make-up options. There is a form but you must request permission.**
4. **Remember - you have two years to graduate.**

FIELD TRIPS

No one leaves the field trip stations or parking lot until the field trip leader gives permission. *You must have signed the attendance sheet*. To ensure no one is left behind or lost, no one leaves the field trip until everyone is accounted for. If a field trip member is lost or injured, the field trip leader may need to use the total available resources to search for the missing party or to help evacuate an injured party.

Please be Cautious. There is always a certain degree of risk in any mountaineering activity. *Pay attention to and follow the leader's directions and advice*. Your safety and enjoyment depends on your cooperation and the cooperation of the entire party.

Be courteous to your instructors and leaders. They are experienced Mountaineers who are giving their time to teach you. Listen to their advice.

You are responsible for being properly equipped for all field trips. Relatives and close friends will be separated during course activities, they can't help with your gear. Check the Field Trip Equipment Checklist for each field trip. On Field Trip #1, there is some flexibility regarding gear. Ask a committee member or instructor if you have further questions. *Inadequately equipped students will not be allowed to participate in field trips for safety concerns.*

The Mountaineers will email you a feedback form after each lecture and field trip. Your feedback is valuable for the committee to improve the course. Please take the time to fill it out.

ESSENTIAL AND CRITICAL SKILLS (see FOTH and pg 6 of TASCSG)

Controlled Risk

Alpine scrambling is a sport of controlled risk. Both objective hazards dependent on the mountain environment and subjective factors dependent on the scrambler must be faced to safely and successfully scramble. The objective hazards such as bad weather and rock fall cannot be controlled. However, the subjective qualities of a scrambler, such as knowledge, skill, conditioning, and judgment, can be developed to overcome or avoid some of the objective hazards encountered while scrambling.

Essential Skills

All skills taught in the Alpine Scrambles Course are essential for you to safely and successfully participate in scrambles. Lectures and field trips are designed to help you learn through discussion, demonstration, and practice. All of the skills taught will increase your general knowledge. Many of these skills must be proficiently performed by you in a test (without help from the instructor), or you will not be permitted to continue subsequent field trips or scrambles. Once a skill test has been completed, you are expected to perform that skill proficiently in all subsequent course activities.

- **Conditioning**
- **Ten essential systems**
- **Navigation**

Critical Skills ***Refer to the Appropriate Field Trip Packet for list specific skills being tested***

A few of the essential skills have been identified as not only essential to successful scrambling but critical to safety. These critical skills are:

- **KNOTS: Knots are demonstrated and practiced at Rock 1 and further practiced as time allows. It is recommended that you practice on your own or request a mentor for additional assistance prior to critical skills testing at Rock 2 field trip. Knots need to be demonstrated without help at the test.**
- **ROCK SKILLS: These are demonstrated and practiced at Rock 1 and 2 field trips. These critical skill are tested at Rock 2 and need to be demonstrated without help. If you encounter difficulty at Rock 1, it is recommended that you request a mentor for additional assistance prior to critical skills testing at Rock 2.**
- **ICE AXE ARREST: This is demonstrated and practiced at Snow 1and Snow 2 field trips. If you encounter difficulty at Snow 1, it is recommended that you request a mentor for additional assistance prior to critical skills testing at Snow 2.**

Practice Makes Perfect

- **Students will be required to perform certain skills at each field trip and on scramble trips. The student should focus on being prepared for the next course activity by practicing the required skills ahead of time. The field trips will include a demonstration of each skill followed by practice. If you want help on an essential skill don't hesitate to ask.**

Corrective Action

If you did not pass a Critical skill test the instructor or field trip leader will contact the Critical Skills person; you will not be permitted to participate in subsequent field trips or scrambles which require that skill. You should contact the Critical Skills person as soon as you are notified of a skill deficiency. From that point on, it is your responsibility to correct your skill deficiencies before continuing in the course.

You will work out a plan to correct your deficiency with the Critical Skills person. (This may have to happen the following year.) You will be advised to contact a mentor or the ASC Committee, depending on the situation. You must then pursue corrective action such as further practice of the skill with a mentor before any retest, if appropriate.

CLOTHING AND GEAR *Don't buy until after Lecture 1*

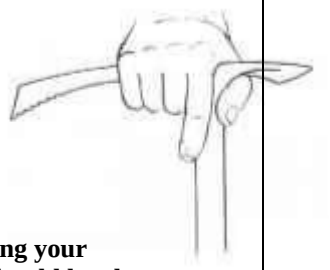
Note that not everything is required by your first trip. FOTH has a wealth of information on this topic. Notes On Expenses - Scrambling requires a fair amount of equipment. If you are not already a well equipped hiker, it can be expensive to outfit yourself. If you have the resources and want all new or top of the line gear, it would be easy to spend $1,000 or more. Most of us don't fall into that category. Fortunately, there are plenty of options available, if you are on a tight budget.

- **USE THINGS YOU ALREADY HAVE – Most everyone has a few items at home that are perfectly adequate – wool clothing, first aid supplies, hats, mittens, sunglasses, etc.**
- **BORROW FROM A FRIEND OR RELATIVE WHO HAS THE GEAR – With increasing numbers of hikers, you shouldn't have to look far to find someone who can help you. This is a good way to find things like ice axes, maps, gaiters, rain gear, packs, or stiff mountaineering boots. Make sure, though, that the equipment is reliable and fits properly.**
- **RENT – If you can find a source. Don't wait until the last minute to rent, because most stores have limited supplies and demand for these items on weekends can be VERY high. Some stores will apply the rental cost toward the purchase of the item.**
- **PURCHASE USED EQUIPMENT – There are several second hand sporting and outdoor shops in the area (see attached list). Thrift stores, surplus stores, and even garage sales are also great places to check.**
- **BE AN INFORMED BUYER – It's easy to spend more money than necessary. Talk to the Alpine Scrambles Course Committee members and other experienced leaders, instructors, and scramblers to gather as much information as you can. Remember, take no one's advice as absolute. *It's ultimately YOUR choice to determine <u>what is best for you</u>.***

REQUIRED SCRAMBLING GEAR (Thanks to Seattle Scrambling Program)

Ice axe

- **The ideal axe is a general purpose alpine axe with a straight shaft and an adze**
- **Specialized ice climbing tools and ultralight trekking axes are <u>not suitable</u>**
- **Most scramblers use an axe length between 60cm and 75cm, which is longer than ice climbers want**
- **Most retail workers will try to talk you into too short of an axe, please ignore their length recommendation and follow the steps below.**
- **Steps to follow to determine a good length:**
  1. **Hold the axe as shown**
  2. **Stand and relax your shoulders**
  3. **Grip the axe firmly with your arm relaxed and the end of the axe near the floor**
  4. **To prevent yourself from leaning over and buying too short of an axe, it may help to hold an axe of the same length in each hand at the same time**
  5. **When leaning over to look at the axe length, don't allow your hand(s) to lower**
  6. **The bottom of the axe should be only a couple inches off the ground while wearing your mountaineering boots, if you're wearing shoes with a thinner sole then the axe should be about an inch off the ground**
  7. **If you are between two sizes then select the longer one**
  8. **If you are tall then you can buy longer axes online, some are available in 90cm or longer**
- **If one of the course instructors tells you your axe is not the proper length then you should exchange it for a new one before the Snow Field Trip, this is not a comfort issue it's a safety issue**



Climbing helmet

- **Must be UIAA or CE approved for climbing**
- **Unacceptable types are bicycle, kayak, motorcycle, snowboard/Ski and other non-climbing helmets**
- **Provides some protection in the event of a fall and protects against rockfall from above**
- **Climbing helmets also have clips around the side to hold a headlamp**
- **Adjustable enough to fit over stocking caps**

Required Gear..

Backpack

- **Around 40L capacity for day trips**
- **50L–60L capacity for multiday trips**
- **Make sure there's a specifically designed method for attaching your ice axe to the outside**

If you can't decide which backpack to get, fill them with weight and select the most comfortable one

Mountaineering boots

- **This is the single most important piece of gear since you'll be wearing them all day!**
- **It's critical to your comfort and safety that you don't try to cut corners by using inadequate footwear**
- **For scrambling you want 3-season (light-duty) mountaineering boots or heavy-duty backpacking boots**
  Light-duty backpacking boots aren't stiff enough and make scrambling difficult
  Heavy-duty mountaineering boots (over $500) can be too heavy, warm and uncomfortable for scrambling
  Trail running shoes are not allowed in this course or on scrambles
- **Stiff toes are very important to allow you to kick steps in snow**
- **Stiff soles with a shank or partial shank are required for edging on rock, hard snow and to accept crampons**
- **Look at boots in the $250 to $450 range**
- **Allow adequate time in a store to try on and walk around in multiple boots**
- **Your toes should never be able to touch the front of your boots**
  Keep in mind that hiking socks are usually on the thicker side and some people wear sock liners for blisters
  When trying on boots at the store, make sure to wear your thick hiking socks
  Try to scuff your feet firmly forward, ideally on a downward slope, to make sure your toes never touch
- **Some factory insoles do not provide adequate arch and heel support, so select good replacement insoles and use them when trying on boots as they can drastically alter the fit of the boot**
- **Waterproof boots are nice but require you to re-apply a waterproof coating over time. Gore-Tex boots are waterproof and breathable but are more expensive**
- **To clean muddy boots just let them dry then use a clean brush, don't use hot water to clean them**

Gaiters – Strongly Recommended

- **Used to keep snow/rocks/dirt out of your boots**
- **When buying, make sure they fit properly – need to be large enough to wrap around your mountaineering boots, but tight enough around the bottom to prevent snow from getting pounded up inside them**
- **Tall gaiters are great in the snow – if only buying one pair then buy tall ones**
- **Short gaiters are nice in the summer**

Wear them under crampons to help prevent accidently snagging your pants as you take high steps

Food

- **Food is energy!**
- **Plan to snack throughout the day, not just one big lunch on the summit**
- **Bring food you like to eat for sometimes you won't have an appetite but you still need to consume calories**
- **Bring more than you anticipate you will eat, there should be extra food at the end of the scramble**
- **It will take some trial and error to figure out the quantities and the types of food which work for you**
- **Food is calories and calories are heat, so keep eating to stay warm**

Water

- **Bring at least two liters**
- **On hot days in the summer you'll want more than two liters**
- **Some people like bottles whereas some people like bladders with drinking tubes**
- **Start hydrating the night before a scramble and continue drinking water in the morning**
- **Bladder drinking tubes easily freeze on very cold days, when you're done drinking blow air back into the tube to remove all the water**
- **On really cold days storing water bottles upside down keeps the opening from freezing**

Required Gear

Clothing appropriate for the weather and conditions - ABSOLUTELY NO COTTON!!

Waterproof jacket and pants

- **This can be important even on blue sky days, it protects from the wind – soft shell jackets are much lighter and protect from the wind but aren't waterproof**
- **Waterproof jacket**
- **Waterproof pants, many types to choose from but use a pair you can put on and take off while wearing your mountaineering boots**
- **Look for a jacket with a hood large enough to fit over your climbing helmet**
- **Note that some have a physical water barrier like Gore-Tex and some are a waterproof coating**

Mid layers

- **Jackets (fleece, down, softshells, windbreakers, etc.)**
- **Shorts and pants (some are stretchy for big steps, some have nice pockets, etc.)**
- **Think in terms of layers since it gives you more combinations to regulate your temperature**
- **Down is great but it must stay dry from rain and sweat to be effective**
- **Wool works great for multiday trips since it doesn't retain odor, but it can be bulky – always wash wool in cold water and on delicate to prevent it from turning into hard felt**
- **Lots of options, figure out what works best for you**

Base layer

- **Usually a thin, form-fitting layer that is designed to wick sweat**
- **Your choice of short sleeves, long sleeves, long underwear, etc.**

Hiking socks

- **Wool works great – always wash wool in cold water and on delicate to prevent it from turning into hard felt**
- **Linear socks to help wick sweat**

Gloves

- **Think about bringing more than one pair since they usually get wet**
- **Mittens are warmer than gloves, but you lose dexterity on scrambling terrain**
- **Some are touch screen compatible, some have pockets for hand warmers, etc.**
- **Lots of options, figure out what works best for you (material, thickness, waterproofness, etc.)**

Stocking cap and balaclava/facemask

A thin stocking cap is nice for when you're hiking, thick ones are nice for an unplanned overnight

CAR KIT

Car kit for the drive home

- **Comfortable clean shoes and socks**
- **Water – for drinking after your trip and for washing your hands and face**
- **Dry clothes so you're not wet and stinky on the drive home, especially if you are carpooling**
- **Wet gear bag for muddy boots and wet clothes, especially if you are carpooling**

Parking pass (if driving)

- **Most trailheads require a parking pass for each car, daily ones are expensive so annual passes are common**
- **If you do not have one then you can choose to carpool with someone who does**
- **Buy them online and at stores such as Fred Meyer, REI, Big 5 Sporting Goods, etc.**
- **America The Beautiful Pass– for National Parks entry and National Forest trailheads**
- **NW Forest Pass – for National Forest trailheads**
- **Discover Pass – for State Parks trailheads (Tiger Mountain, Mailbox Peak, Mt. Si, etc)**

Carpool money (if carpooling)
- **Carpooling is always optional**
- **If you choose to carpool then bring cash to pay your driver, be generous**
- **$0.12 to $0.14 per mile roundtrip may be a good starting point for each passenger – calculate the amount the night before at home so you have appropriate dollars**
- **What you pay is not just for gas, it is also for the convenience of not having to drive home when you are tired and it is dark, for the wear and tear to the driver's vehicle, for the dirty mess left in the drivers vehicle, for the risk of theft and damage at the trailhead, etc.**

Spike and pick guard for ice axe Prevents scratching the inside of your car, especially if you are carpooling - better yet remove the axe from your pack.

SUGGESTED GEAR

2nd headlamp
- **Can be nice if yours breaks or if someone else forgets theirs**
- **Two small headlamps can be better than one big one – when hiking down a trail you can see better if you wear one on your head and carry one in your hand, the contrasting shadows show the rocks and steps better**
- **Having two small headlamps can be more reliable and flexible than one large headlamp**

Altimeter
- **Very useful for navigating and route finding**
- **Some $40 altimeter watches work great**
- **You can also use a smart phone with a free GPS altimeter app installed, there are many to choose from – there are a couple documents on The Mountaineers website comparing the accuracy of the different apps:**
  mountaineers.org > In the top header search for "altimeter apps"
- **Bring backup batteries/charger since battery levels can drop quickly, especially in cold weather**

Approach shoes
- **Especially useful when there's a very long trail before the scramble begins**
- **Before wearing them get approval from the trip leader**
- **They should have grippy soles such as Vibram or equivalent**

Bandana / Buff

Bathroom kit
- **Toilet paper**
- **A couple "blue bags" and/or multiple ziploc bags**
- **Hand sanitizer**
- **Hygiene products**

Camera

Sock liners
- **Wick sweat to help prevent blisters**

Suggested Gear

Crampons (if required by trip leader) FOTH pages 333-337

- **Used in the spring and summer on hard snow and ice and on wind-blown slopes in the winter**
  If you're not sure whether you should bring them on a scramble then check with the scramble leader
- **Be sure to take your boots with you when shopping for crampons to ensure a proper fit**
- **Crampons with 10+ points, including 2 horizontal front-points, work great**
- **Lightweight aluminum crampons are ideal for scrambling. Steel crampons are also acceptable but generally heavier than aluminum and stay sharp longer.**
- **Full straps for the heel and toe make them more versatile and are cheaper. If your boots have crampon grooves you can buy a set with metal bars which lock into the grooves**
- **Purchase crampons that allow you to adjust the length without a screwdriver**
- **Anti-balling plates can be a nice feature in certain types of snow conditions but they aren't required**
- **New crampons are extremely sharp and can be dangerous. For scrambling they don't need to be as sharp, we aren't ice climbing See FOTH page 336 for sharpening, you can also dull them with a file on purpose. Aluminum is great as use makes them dull quickly.**
- **There are several ways to carry crampons on your backpack and to keep the points from cutting your backpack and other gear: sandwiching a thick foam rectangle, a tyvek bag, or a special crampon bag (costs money and weighs more). Talk with your instructors to figure out what works best for you.**

GPS unit

- **<u>Not a substitute for a paper map</u>**
- **Standalone units or phone apps such as GAIA, Backcountry Navigator or other options**
- **Bring a protective case for phones and non-weather proof GPS units**
- **Bring backup batteries/charger since battery levels can drop quickly, especially in cold weather**

Hand and Toe warmers

- **Have an expiration date**
- **Great for emergencies such as an unplanned overnight**
- **Great for people who get cold extremities easily**
- **Some gloves have slots for hand warmers**

Ice axe leash

- **Used on steep snow or any place where dropping your ice axe would result in its loss**
- **Some people use a long one, some people a short one and some people don't use them at all**
- **Talk with a few instructors about why they prefer their method**
- **You can make one from 1/2 inch webbing, or you can buy a specifically designed leash**

Insect protection

- **Repellents with DEET work great but might have a health risk – other products containing picaridin or lemon eucalyptus oil**
- **Head nets can be a lifesaver during peak insect season – they pack small and weigh next to nothing**

Overnight gear for multiday scrambles

- **Some gear you can share such as a tent, stove, water filter, etc.**
- **Camping gear you'll probably want: sleeping bag, sleeping pad, dinner, spoon, etc.**
- **Camping gear you can share with others in your group: tent, stove, water filter, etc.**
- **Read the trip's online Leader Notes and the email from the trip leader for specific overnight gear and logistics**

Sit pad / insulation pad

- **Important insulation barrier between you and the ground, especially on snow (use 2)**
- **Very useful for an unplanned overnight**
- **Can be used as a splint for injured limbs**
- **Some backpacks have a removable pad which doubles as an insulation pad**

Suggested Gear

Sun hat
- **Keeps the sun off your head and possibly your neck**
- **Instead some people prefer thin jackets with hoods**
- **Baseball hats work but don't protect your neck**

Snowshoes
- **Get very aggressive snowshoes with large crampon teeth and lateral teeth on both sides**
- **Some types have a heel lift which can be useful when ascending snow**
- **Avoid tube-frame styles since those usually don't have lateral teeth**
- **Snow in our local mountains isn't usually dry powder, so you don't need long snowshoes based on the manufacturers' weight recommendations – usually you want the shortest ones, plus shorter ones are much safer when descending**
- **Talk with a few instructors about the type they prefer**

Traction Devices
- **Used to travel along icy trails.**
- **They need to be rugged, like Microspikes for instance. inexpensive Yaktrax won't work**

Trekking poles
- **Some people use two poles, some people use one, others use none and others prefer an ice axe instead**
- **Helpful for balance and support on steep ascents and reducing impact to knees on descents**
- **Useful for stream crossings**
- **Poles which collapse into two or three sections minimize brush snags when attached to your backpack**
- **Some have component parts which are replaceable when they break**

Umbrella
- **Great when you know you'll be on a trail for a long time in the rain**

Water filter
- **Needed on some long scrambles, check with the trip leader**
- **Iodine tablets are great for emergencies but are slow to sterilize**
- **Some filters requiring pumping, some requiring squeezing and some let gravity do the work (great for camp)**
- **Be aware that some lakes or streams shown on maps may be seasonal or inaccessible**

Waterproof sacks or backpack water barrier
- **Most backpacks are not waterproof, so you need to come up with a solution to keep the contents dry**
- **Needed in the rain and when setting your pack down in the snow**
- **A couple different ideas:**
  -Pack covers fit on the outside, heavy rain still gets in, make sure it fits over your ice axe
  -Pack liners line the inside of your backpack, trash compactor bags from the hardware store work well
- **Large ziploc bags work well to keep specific items dry**

Whistle
- **For emergency signaling (three blasts)**
- **Some backpacks have built in whistles but often they are quiet and inaudible in rugged terrain**

SOME STORES (this is not an endorsement)

Arc'teryx	**http://arcteryx.com**	
Ascent Outdoors	**http://ascentoutdoors.com**	**Seattle, Surplus, Rentals**
Backcountry	**http://backcountry.com**	
Bentgate	**http://bentgate.com**	
Backcountry Gear	**https://www.backcountrygear.com/**	
Big 5 Sporting Goods	**http://big5sportinggoods.com**	

Campmor	**http://campmor.com**	
Eastern Mountain Sports	**http://ems.com**	
Eddie Bauer / First Ascent	**http://eddiebauer.com**	
Feathered Friends	**http://featheredfriends.com**	**Seattle, Rentals**
Hilleberg the Tentmaker	**http://hilleberg.com**	**Redmond**
Hyperlite Mountain Gear.	**https://www.hyperlitemountaingear.com/**	
McHale Custom Backpacks	**http://mchalepacks.com**	**Seattle**
MEC	**http://mec.ca**	
Miyar Adventures	**http://miyaradventures.com**	**Redmond**
Moosejaw	**http://moosejaw.com**	
Mountaineers Marketplace	**http://facebook.com/groups/377304859047281**	**The Mountaineers, Used**
North Face	**http://thenorthface.com**	
Outdoor Research	**https://www.outdoorresearch.com/us/en/retail-store**	**Seattle, Rentals**
Patagonia	**http://patagonia.com**	
Play It Again Sports	**http://playitagainsports.com**	**Used**
Pro Mountain Sports	**http://promountainsports.com**	**Seattle**
REI	**http://rei.com**	**Rentals**
REI Used	**http://rei.com/used**	**Used**
Sierra Trading Post	**http://sierratradingpost.com**	
Steep & Cheap	**http://steepandcheap.com**	**Clearance**
Summit Hut	**http://summithut.com**	
Tarptent	**http://tarptent.com**	
Wildernest	**http://wildernestoutdoorstore.com**	**Bainbridge Island**
Wonderland Gear Exchange	https://wonderlandgearexchange.com/	**Seattle**
Zpacks	**http://www.zpacks.com**	

Some repair shops (this is not an endorsement)

Chick's Shoes	**http://chicks-shoes.com**	**Mercer Island, boots**
Dave Page Cobbler	**http://davepagecobbler.com**	**Seattle, boot and shoes**
Rainy Pass Repairs	**http://rainypass.com**	**Seattle**

(Thanks to Seattle Scrambling Program)

SAFETY

It is said that the mountains are not inherently dangerous, but that they are *absolutely* unforgiving. Scrambling is not without risks. Most risks can be reduced or avoided with training on how to recognize and avoid potential environmental hazards and human factor hazards - an objective of this course. Yet, all risks cannot be anticipated. It is not uncommon that some sort of incident occurs each year within the local mountaineering community.

It is imperative to -

- **pay close attention to the leader's instructions and advice**
- **study the suggested text**
- **bring appropriate clothing and proper equipment.**
- **make safety your first priority in all phases of scramble trips including trip planning/preparation and driving to and from the trailheads**
- **not delegate your safety to the leader**
- **ask questions about safety, if you are unsure of your ability to meet trip requirements, need help**
- **put your learning into practice in order to prevent mishap and injury (or rarely, even a fatality)**
- **stay alert and think about potential hazards and how to get around or avoid them while traveling**
- **be responsible for preparing and taking care of yourself , you know your limits better than anyone else.**
- **share information and thoughts that might be of value with the party and especially with the leader.**

You and your fellow scramblers share in the responsibility for the scrambles party with which you travel. <u>The Mountaineers are not a guide service</u>.

THE TEN ESSENTIAL SYSTEMS

Read FOTH more details

A list of the ten essentials was first developed by climbers in the 1930s to prepare them to survive the unexpected. At a minimum, you need to carry sufficient equipment and clothing to be able to survive in the event of an emergency. Be ready to spend the night in the worst conditions imaginable, and plan for it. Remember, you want to *survive*, not necessarily be in comfort. *Carry the Ten Essential Systems with you on ALL field trips and scrambles.*

The Ten Essential Systems

1. **Navigation**
2. **Sun protection**
3. **Insulation (extra clothing)**
4. **Illumination**
5. **First aid supplies**
6. **Fire**
7. **Repair kit and tools**
8. **Nutrition (extra food)**
9. **Hydration (extra water)**
10. **Emergency shelter**

10 E's RECOMMENDATIONS AND IMPORTANT NOTES:

NAVIGATION

- **Compass Requirements - The Mountaineers Navigation Course has compass requirements (adjustable declination, sighting mirror, etc.) so be sure to check with that program when purchasing your compass.**
- **Maps are readily available for free on multiple websites like CalTopo for example. There is no excuse to show up at a scramble without a map.**

ILLUMINATION

- **Headlamp –make sure it water resistant and the switch cannot be easily turned on (accidentally) in your pack. Recommended:50 lumens or more**
  Extra Batteries or headlamp are highly recommended

FIRST AID SUPPLIES

- **First Aid Kit – An adequately prepared mountaineering oriented first aid kit must be carried on every trip.**
- ***Note: If you are injured, the rescuer will use your first aid kit to administer first aid on you.***
- **FIRE - Practice with your fire starter system outside on a rainy day BEFORE you go into the outdoors.**
- **Matches – An emergency supply of waterproof matches stored in a waterproof container. Carry a striker in the waterproof container as well. *A lighter is not an acceptable substitute for emergency matches*.**
- **Fire Starter –If use small candle should be table type, not birthday. It should be noted that fuel tablets (such as Hexamine) produce toxic fumes.**

REPAIR KIT & TOOLS: Many useful items can make up a repair kit such as duct tape, webbing, safety pins, zip ties, etc. At a minimum you must have a knife to satisfy this requirement.

FIRST AID, ACCIDENT RESPONSE AND ALPINE RESCUE

When traveling in the mountains, first aid takes on an entirely new meaning. Here professional medical help is hours or days away. The medical supplies that are available are those that you have with you, and you are your own rescue team. Therefore it is important to understand the 7 steps of accident response in case someone becomes injured in your party. They are listed below, but make sure to use *Freedom of the Hills* to understand the details of each step.

1. Take charge of the situation
2. Approach the patient safely
3. Perform emergency rescue and urgent first aid
4. Protect the patient
5. Check for other injuries
6. Make a plan
7. Carry out the plan

When an emergency arises and you can't move the victim or need help, you must know how to contact and interact with local authorities vs search and rescue (SAR). Start by calling 911 or using the help mode of a personal locator beacon. Search and rescue needs specific information to be able to quickly and effectively extract the injured scrambler and party, but 911 might not completely understand the information you are giving them. Make sure to know what information to provide and to whom.
With all this in mind, and the fact that this is such an important topic, all Mountaineer Scramble Courses require completion of a Wilderness First Aid (WFA) or alternate course. It will contribute well-being of the group. However, make sure to be able to recognize the signs and symptoms and know how to prevent and/or treat common mountain maladies, such as:

Hypothermia	**Snow Blindness**	**Sprain**
Heat Exhaustion	**Blindness**	**Blisters**
Heat Cramps	**Strikes**	**Dehydration**
Frostbite	**Contaminated Water**	
Strain	**Lightning**	

Altitude SicknessWFA courses are offered through the branches of the Mountaineers. Register and enroll in WFA course as soon as you can. If for some circumstance WFA is the only part of the requirements for graduation that the student is missing, the student is encouraged to apply for graduation and participate in the graduation potluck. When the WFA course has been completed, the student will then receive the graduation certificate and badge.

THE MOUNTAINEERS EMERGENCY PLAN

Overview

- **The Mountaineers Scramble Trips are planned with safety as the foremost concern, however accidents do happen so please be sure to have an emergency contact person assigned to your Mountaineers' profile. Refer to complete plan on page 12 of TASCSG**

HEALTH AND NUTRITION (Thanks to the Tacoma Climbing Program)

Maintaining your health and energy in the mountains is not tremendously different from what you do everyday - you need to eat, drink, stay warm, and get adequate rest and hygiene. It does require a little more effort and planning ahead. NOTE: ALWAYS EAT BREAKFAST, EVEN IF YOU ARE NOT HUNGRY

Health/Hygiene

It's fairly easy to stay healthy and to practice adequate hygiene in the mountains. Follow these tips:
• Bring a hand wipes or a small bottle of hand sanitizer to use:
- **after washing your hands in a lake or stream**
- **before eating or preparing food**
- **after going to the bathroom**

• Do not eat snow/ice – it may appear pure, but it's likely not
• Always use filtered water for drinking and/or brushing your teeth (if necessary)
• If bringing other hygiene products (deodorant/body wipes) make sure to put them in a separate air tight bag/container – they must be put into a bear canister or hung up with the rest of the food at night or when leaving camp.

Water

As a general rule of thumb, you should drink a about one liter per hour at lower altitudes, moderate temperatures, and medium exertion, and up to 1.5 liters per hour at higher elevations, in extreme environments, and/or high levels of exertion. In addition to these recommendations, the best rule of thumb is to monitor urine output and color. Urine should be copious and clear. You are not drinking enough if you are not urinating and/or it is dark in color. Try to remember to drink before you start to get thirsty.
Dehydration: signs and symptoms: dry/sticky mouth, tiredness, dry skin (when everyone else is sweating), headache, dizziness, and cramping. Make sure to continuously take in fluids.

Food

Energy requirements (i.e. calories) will vary somewhat depending on an individual's conditioning and metabolism, as well as on the length and strenuousness of the scramble. Overall, you should expect to expend between 2500 - 5000 calories per day on an average scramble in the Pacific Northwest. Plan your food accordingly!!! Include:

• Simple carbohydrates for fast energy and muscle recovery (ie something to snack on if you start to feel tired or are taking a quick break). Good sources of this are: honey sticks, dried fruit, candy, chocolate, and gels.
• Complex carbohydrates for sustained energy and to keep hunger away (i.e. something you would eat for breakfast, lunch or dinner). Good sources of this are: breads, rice/pasta, tortillas, pizza, oatmeal, and bars.
• Protein to help in muscle repair and recovery and to keep you feeling full longer (i.e. eat this when you stop for longer breaks or are starting to get hungry): Good sources: tuna packets, beef or turkey jerky, and pepperoni sticks.
• Fats help to keep you full and provide the needed energy for high altitude/extremely cold temperature expeditions. Good sources: nuts and nut butters
• Electrolytes: your body needs these salts to function properly, and to prevent muscle cramps. Be sure you continue to take in electrolytes because you sweat out a ton. Good sources: Gatorade, nuun, sports legs.

As much as is practical, stick to familiar foods. It is not a good idea to experiment with radical changes in your diet during a wilderness trip. Refer to the Food section of FOTH

CONDITIONING TEST STANDARD (also pg 7 of Student Guide)

1. **An outing involving at least 2500 ft of elevation gain with at least 2 hours of sustained strenuous uphill hiking, Mt Si trail for example. Complete within 2.5 hours (one way) in most cases.**
2. **Carry a pack containing ~20% of your weight (25 lbs. min., 40 lbs. max.). We suggest you carry water rather than gear, so you can dump it and save your knees going down.**
3. **Must be completed prior to participation on Snow Overnight field trip.**

Conditioner hikes allow the student and the Scramble Committee to determine if the student is in sufficient condition physically to participate in a scramble. If you have to struggle to barely pass, your outlook for successful scrambles is doubtful without dedicated physical conditioning exercises. Students can and are encouraged to sign up for as many conditioner hikes as they like. *Successfully completing a conditioner hike is a requirement for Overnight Field Trip.*

PHYSICAL CONDITIONING See FOTH page 79-89

- **Alpine scrambles are strenuous aerobic activities usually lasting from 6 to 12 hours, or more. You will be carrying roughly 25 pounds on your back; walking many miles, typically 8-10; with several thousand feet of elevation gain. You will be walking over uneven terrain, quite often snow, and sometimes uphill through thick vegetation. All this activity demands that you be in good physical condition. Lack of physical conditioning can affect the individual and party to the point of considerable safety hazard. Tired scramblers slow group progress and they become increasingly faulty in movement and judgment. For lack of physical conditioning, numerous destinations aren't reached and the trip becomes an ordeal for all involved. This course requires you to pass a conditioner test to make sure your own physical conditioning will allow you to participate in all activities comfortably and safely.**
- **Energy expenditures may be nearly identical for all members of a scramble party on a trip together. But there may be wide variations in their available aerobic power - their body's ability to absorb and use oxygen. The amount of oxygen a person can use to do muscular work depends on age, sex, and training. An individual's maximum oxygen consumption is the amount of oxygen used to work to exhaustion, that point where muscle biochemistry will not allow any further work. The experienced mountaineer sets the pace using a proportion of their available power so that he or she is capable of continued exertion to achieve the summit, to descend safely, and to drive home. If you have less aerobic power than the other members of the party, you will be using a much greater proportion of your total aerobic capacity. The greater proportion of your aerobic capacity you use, the more you have to push to keep up, and the sooner you will be exhausted.**
- **Your desire to scramble in the high country does not automatically give you the aerobic capacity you need to be a capable member of a climbing party. Lectures, reading, field trips, and practice sessions can provide you with the technical know how, but aerobic power can only be gained if you regularly participate in strenuous physical activity that will develop adequate aerobic capacity. If you really want to achieve your desire, start NOW to make it physically possible!**
- **Jogging, swimming, bicycling, climbing stairs, hiking, and other strenuous activities have an aerobic training effect if done regularly for a long enough period of time. The activity should be prolonged enough to warm the muscles, produce a sweat, and induce mild breathlessness. To be of aerobic value,**

exercise should be 30 to 45 minutes in duration. Increase the length of your workout each week by 10 percent.

- **Do stretching and balancing exercises to improve your flexibility and agility. You may also stretch before and after exercise and any scrambling. Stretching will help prevent tight and torn muscles. Inclusion of strength exercises in your conditioning plan is also recommended. If you are over 40 years old, a consultation with your physician is recommended prior to starting any exercise program.**

ARE YOU IN CONDITION?

- **Running, bicycling, walking and swimming all help to improve one's aerobic conditioning; however being in condition for alpine activities requires a little bit more. Scramblers are generally active at higher elevations and for longer periods of time, while carrying moderately heavy loads.**
- **If you are in acceptable condition for scrambling, you can ascend non-technical terrain at a rate of about a thousand feet per hour with a 25 - 35 pound pack and maintain that pace for three or more hours. To improve your condition, climb Mt. Si to the base of Haystack with a 25 - 35 pound pack. It should take about two hours or a little more in good weather conditions. If you are having trouble, walk up hills or stairs with a heavy pack. Both jogging and bicycling up hills also builds the muscles needed to ascend mountains.**

You Are NOT IN Condition If…

- **You fatigue after a short period of time.**
- **You use more oxygen for a given amount of work - your body is inefficient.**
- **More lactic acid accumulates in your muscles from exertion - tending to produce cramps, stiffness, and soreness in following days.**
- **When you force yourself to reach the summit, you do so at great cost to your body's economy.**
- **When you push yourself to exhaustion, you frequently stumble and become too tired to think clearly.**
- **You are a liability to the party.**
- **You have no reserves.**
- **You recuperate slowly and are still dead-tired the next day.**
- **You are readily subject to the diseases and ailments of a sedentary life.**

You Are IN Condition If …

- **You can keep going more comfortably and for a longer period of time.**
- **You have lower oxygen consumption for a given amount of work because your lungs perform more efficiently.**
- **There is less lactic acid in your muscles from exertion and consequently little or no stiffness or soreness.**
- **You have the ability to push yourself further with safety.**
- **You have a real reserve available for an emergency.**
- **Your body functions automatically and you can concentrate on route finding and technical skills.**
- **You are an asset to the party.**
- **You enjoy yourself.**
- **You recuperate faster after an exhausting effort.**
- **You have built up a wall of defense against diseases and ailments of the sedentary life.**

MENTAL CONDITIONING

The mental fatigue of strenuous walking hour after hour can also be a source of frustration, stress and a cause of mishaps. You will enjoy scrambling more if you combine your program of rigorous aerobic exercise with regular (weekly) long hikes or scrambles.

Three mental attributes will immensely help your scrambling enjoyment and success:
(1) a good sense of humor
(2) a positive mental attitude
(3) determination!

Hopefully, you already have a positive mental attitude and a good sense of humor. This course will provide you with additional confidence and build your ability to begin scrambling. Each scramble adds to what you already have learned. Scrambling is difficult, but rewarding. The scramblers who are most successful and enjoy the sport the most are those who have a positive mental attitude and a great sense of humor. That's why scramblers are such neat people!

What if I'm slow, even when I work out? How can I keep from slowing down other scramblers? First of all, this course is held for enjoyment – it is NOT a competition. Don't worry about it. Do the best you can; we won't push you to do things of which you are not capable. With constant regular work outs you will be able to get in an acceptable physical condition in time. We try to group students with similar abilities together at field trips, so no one should feel pressured to keep up with a super strong classmate. Conversely, have a little sympathy for an older person or some of us of lesser ability. As one scramble leader said, "No matter how slow you are, you are infinitely faster than a search and rescue team caring for an injured person."

When signing up for a scramble trip, ask the leader whether the trip and the planned pace are appropriate for your skills and ability. Exceeding your ability or forcing others to exceed their ability leads to fatigue, impairs judgment, and risks the group's safety. Keep in mind most scrambles are full, daylong activities. The aerobic demands on your body for such an activity are much different from a normal jog or swim. You need to replace food and water during a scramble to maintain a high level of energy. Short breaks allow some recovery but your total energy level will decrease steadily throughout the day.

KNOTS (www.animatedknots.com)

Better to know a knot and not need it, than need a knot and not know it. -Gary Zink

While scrambling does not involve extensive rope handling, ropes and webbing are often used as an aid in getting around difficult or hazardous locations. Therefore, it is critical for scramblers to know how to tie key knots correctly and to be able to recognize correctly tied knots. The knots you need to know are:

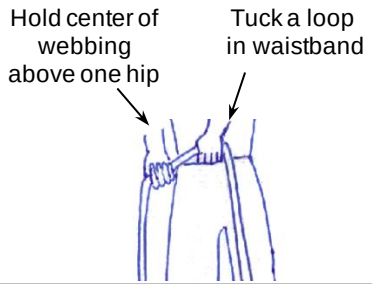
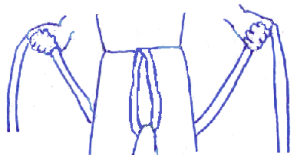
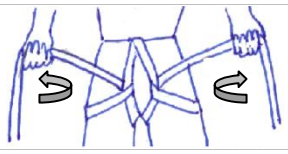
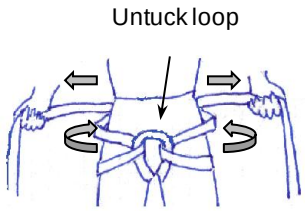
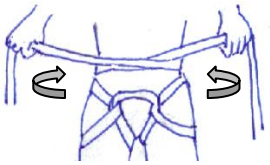
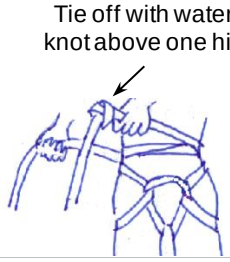
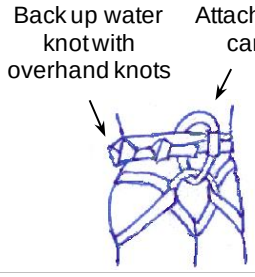
- **Overhand knot**
- **Girth hitch**
- **Water knot**
- **Prusik knot**
- **Klemheist**
- **Figure 8 loop (Figure 8 on a bight)**
- **Rewoven Figure 8 (Figure 8 Follow Through)**
- **Double Fisherman's knot (Double Fisherman's Bend; Grapevine Knot)**

<u>Dressing Knots</u>: This term refers to the practice of ensuring that the rope or webbing used to tie a knot is correctly positioned. The knot material lies cleanly and in correct position in relation to other strands in the knot. The sign of a correctly tied knot is a well-dressed knot. It also increases the likelihood that you will be able to untie the knot later. A poorly dressed knot is weaker than a properly dressed one. (Even properly dressed knots decrease rope strength up to 50% or more.)

<u>Practice</u> tying knots around large and small items (e.g., your waist, a tree, table leg, etc.) as well as tying knots to things (e.g. other pieces of rope or webbing, to eye-bolt openings, etc.). You will be expected to tie all of these knots under the close scrutiny of your instructor! Your knots will be inspected for good dressing. PRACTICE! PRACTICE! PRACTICE!

<u>Harness</u>: In addition, you will learn how to set up and use a quick self-rescue system called a hasty harness and prusik loop, consisting of a 20 to 25 foot long or longer (depending upon your girth) 1-inch tubular webbing, a pear-shaped locking carabiner, and a loop made with a 8 feet long 5 mm. perlon cord. A climbing harness is optional, ask the leaders for suggestions. The system should be carried in your pack for scramble trips along with the ten essentials systems. When a need arises to use a fixed line for safety, you construct a harness with the webbing or put on the climbing harness, attach the carabiner to the harness, attach the prusik loop to the fixed line using a prusik knot, or Klemheist and then clip your carabiner to the loop.

How to construct a Hasty Harness.

Grab the webbing in the center (mark the center) and hold it on one hip. While holding it there, take a strand and tuck a loop into the waistband in front. Drop the two webbing ends down making a loop at the waistband.	
Pass both ends back between the legs, around the outside of the upper thighs. As you wrap the ends around your legs, keep them low and tight near your butt cheeks.	
Bring the webbing ends to the front and through the tucked loop.	
Tighten up the lines, pulling the webbing from its tucked position so that it is tightened between the two loops. Bring the webbing ends back around the waist	
Bring the webbing ends back and around waist once (or more, if you have a lot of extra loose ends) ending at the hip where you placed the mid-point of the webbing.	
Securely tie the two ends with a water knot making sure the fit is snug. It is easiest if the initial part of the water knot is placed on the front strand of webbing. A square knot can also be used. It must have half hitches on both sides to lock it.	
Back up the knot by tying each tail around the wrap-around strand with an overhand knot. There should be at least 2–3 inches of tail. Clip in a large locking pear-shaped carabiner through the loop and the strands wrapped around the waist.	

ONLINE QUIZ – required and self correcting https://goo.gl/forms/69T7tkOkPSSIpOGu1