



Alpine Institute

Alpine Ice Equipment Checklist

This list is designed as a “worst case scenario”, a trip with significant inclement weather. However, if a program does not encounter significant weather, there may be items here that are not used. As you prepare for your trip, it is important to plan for the worst and hope for the best. That being said, an alpine climber should be able to carry as little as necessary.

On the first day of your program, an AAI Guide and Equipment Specialist will work with you to refine your mountain kit. They will ensure that you bring exactly what is needed. It is acceptable to bring too much clothing and equipment to your initial meeting. It is also fine to bring things that you may have questions about. Any extra equipment can be left behind at our Equipment Shop for safekeeping.

The Cascade climbing season is defined as May 1st through October 1st. This list will reference early, mid, and late-season conditions. They are defined as follows:

Early Season: May 1 - July 1

There is usually significant snow both on the ground as well as on the glaciers. You should expect to encounter deep, wet snow during the day and firm conditions at night. Overnight temps range from 15° to 40°F (-9° to 4°C). Daytime highs range from 35° to 70°F (1° to 21°C). Precipitation as snow or rain can be likely.

Mid Season: July 1 - September 1

Temps range from 40° to 50°F at night with occasional dips below freezing. Daytime temps often reach 70°F. You should expect the possibility of freezing temps above 9000ft on summit days throughout the summer. Though mid-season tends to be dryer, the possibility of rain is always there.

Late Season: September 1 - October 1

September is a varied month. Temps begin to drop both during the day and at night. Late in the month, you may encounter an increase in snow and rain.

Please be sure to check the forecast several days before your course to ensure that you are properly prepared. You can view the weather here:

[NOAA Mt. Baker-Snoqualmie National Forest Weekly Forecast](#)

PROVIDED EQUIPMENT: Climbing rope, anchors, solid waste bags.

RENTALS: Equipment that is available for rent through the AAI Equipment Shop is designated with a “Rent” check box. These items can be rented on the first day of your course.

You can call or email the Equipment Shop for advice on gear.

shop@alpineinstitute.com

360-671-1570

CLOTHING

Beanie/Toque (Optional)

Wool or synthetic. Must fit under a helmet. Easily replaced with hooded layers after the early season.

Buy
 Own

Sun Hat

Ideally fits under a helmet. Ball caps with a button on top are NOT recommended. Visors or athletic hats are more comfortable, vent better, and are easier to clean and dry out.

Buy
 Own

Buff/Neck Gaiter

Look for one that is UPF-rated. Lighter colors are better for warm conditions and darker for colder conditions.

Buy
 Own

Glacier Glasses

THESE ARE MANDATORY. Look for a pair that fits well and has side shields. The lenses should not let more than 12% of light through. Photochromic are more expensive, but usable in a wider range of light.

Examples: Julbo Spectron, Julbo Reactiv Performance, Julbo Reactiv High Mountain

NOTE: Those using contacts should also bring a pair of prescription glasses in the event that your contacts or solution are lost or damaged. If you only use glasses, get a pair of over-the-glasses glacier glasses.

Buy
 Own

Headlamp

Bring extra batteries or charger for rechargeable battery style. Ideal range is 200-350 lumens.

Examples: Petzl Swift RL, Petzl Actik

Buy
 Own

Liner Gloves

Thin, lightweight, wool or synthetic gloves. Size to fit snug but not too tight. Phone-compatible fingertips and palm texture are nice to have. These could be worn alone in temps greater than 45°F when it is dry. UPF rated are ideal. Bring 1-2 pairs.

Examples: OR Vigor Sensor, The North Face Etip Grip

Buy
 Own

Midweight Softshell Glove

Bring 1 pair, 2 during the early season. These gloves are used for belaying, tying knots, rope management etc. Dexterity and durability are key. They provide slightly more insulation than a liner glove and are generally used in temps of 15° to 30°F while actively using your hands. Comfortable but snug fit. Durable leather or synthetic palm. Water-resistant is recommended because they will dry faster.

Examples: Mountain Equipment Super Alpine, Rab Vapour-rise

Buy
 Own

Hard Shell Glove

Waterproof and insulated. If the glove lacks insulation, size it to fit a liner glove inside. Mainly used in wet conditions, cold temps, or when not moving.

Examples: Black Diamond Renegade, OR Highcamp.

NOTE: April-May courses are often much colder and may require more heavily insulated gloves like the Black Diamond Guide.

Buy
 Own

Sports Bra

Wool or synthetic. Comfort is key. Avoid bras with adjusters and clasps, as they could get compressed by your pack straps. Racerbacks are a popular option.

Buy
 Own

CLOTHING CONTINUED

Base Layer

A lightweight, wool or synthetic sun hoody is ideal. UPF 30+ sun protection is best. UPF clothing works better than sunscreen.

Examples: Patagonia Capilene Cool Daily Hoody, OR Echo, Rab Pulse

- Buy
 Own

Active Insulation Layer

Lightweight “gridded fleece” or lightweight synthetic insulated jacket. Hood preferred. Active insulation weight - 40g/m². Heavier insulation weight - 60-80g/m²

Examples: Patagonia R1, Patagonia Nano Air, Arc’Teryx Proton LT

- Buy
 Own

Soft Shell Jacket or Windproof Jacket

A soft shell jacket is considered an “action layer.” Its materials are designed to stretch and breathe while also maintaining wind and water resistance. This allows the user to leave this jacket on for a wide range of temps and conditions throughout the day without the hassle of constantly changing layers.

Windproof jackets are lightweight and packable, but lack the breathability and stretchy nature of the soft shell. Windproof jackets are ideal for blocking wind and light precipitation during low output activities.

Example Softshells: Black Diamond Alpine Start Hoody, Rab Borealis, Mountain Equipment Squall, Patagonia Houdini Air

Example Windproof: Patagonia Houdini, Arc’Teryx Squamish Hoody

- Buy
 Own

Insulation Jacket

AKA the “puffy”. Down or synthetic. This piece is worn in cold conditions or when not moving. Hood preferred. If choosing down, water-resistant down treatment is preferred to help prevent matting and loss of insulating ability if the jacket gets wet.

Examples: Arc’Teryx Nuclei FL, Patagonia DAS Light, Patagonia Down Sweater, Arc’Teryx Cerium, Rab Alpine Series

- Buy
 Own

Hardshell Jacket (Waterproof Rain Jacket)

Non-insulated jacket with a waterproof and breathable membrane. Three-layer construction is recommended. It must have a hood, ideally helmet-compatible. When sizing, make sure it can fit over other layers. Ski jackets are discouraged because they are usually not waterproof and have heavy insulation.

Look for Gore-Tex, eVent, Drillite, H2NO, Pertex Sheild.

Examples: Patagonia Torrentshell, Arc’Teryx Alpha AR, Mountain Equipment Lhotse

- Buy
 Own
 Rent

Undergarments

Wool or synthetic. Long, compression-style undergarments can help reduce inner thigh chafing.

- Buy
 Own

Base Layer Pants (aka “Long Johns”)

Wool or synthetic. Bring 1 for early or late season. Optional for mid-season (depending on weather).

Examples: Patagonia Capilene midweight or thermal weight (Thermal is warmer)

- Buy
 Own

Soft Shell Pants

Thin, weather-resistant, breathable, and stretchy. You will wear these a majority of the time.

Examples: Patagonia Altvia, Mountain Equipment Ibex, Arc’Teryx Gamma FL

- Buy
 Own

CLOTHING CONTINUED

Hard Shell Pants (Waterproof Rain Pants)

Non-insulated, waterproof, and breathable membrane. Full side zips are recommended. Ideally has at least 1/4 length zipper from the bottom of the pant cuff in order to get pants on and off while wearing mountain boots. When sizing make sure it is able to fit over a base layer and soft shell pants. Insulated ski pants are strongly discouraged due to lack of waterproofness and heavy insulation.

Materials: Gore-Tex, eVent, Drilite, H2NO, Pertex Shield

Examples: Patagonia Torrentshell, Arc'Teryx Beta Pant

- Buy
 Own
 Rent

Socks

Wool or synthetic socks that are at least mid-calf height. Modern boots are designed to insulate your feet, so a thicker sock is not recommended as these tend to lead to blisters and moisture retention. Using a lighter sock allows for a more accurate boot fit. Wearing a "silk-weight" liner sock beneath your hiking sock can reduce friction on the skin and mitigate blister development.

Examples: Darn Tough Coolmax Lightweight

- Buy
 Own

Approach Shoes or Trail Shoes (Optional)

Recommended for the 1-day of rock climbing. Used on good weather approaches for mid and late season and at camp. Early season tends to have too much snow on the ground and it is recommended to hike to camp in your boots. Be aware that trail running shoes do not offer as much support when hiking with a heavy pack. High stack shoes like Hoka are not recommended.

Example Approach: La Sportiva TX4, TX2, Scarpa Rapid

Example Trail Shoes: Topo Athletic Terraventure, Altra Lone Peak, La Sportiva Kaptiva, Salmon Sense Ride

- Buy
 Own

Mountaineering Boots

Must be stiff (full-shank or equivalent). Crampon compatible, mountaineering boot. Double boots recommended prior to mid-June. For courses after Mid-June, single boots should be used.

NOTE: We rent double plastic boots for our May/June courses and single boots for the rest of the season. There are many makes and models out there and not all of them are created equal. Please consult our Equipment Shop if you are uncertain about the acceptability of your chosen model.

Example Double Boot: Scarpa Phantom 6000, La Sportiva G2SM

Example Single Boot: La Sportiva Nepal Cube, Scarpa Mont Blanc Pro

Example 3/4 Boot : La Sportiva Trango Cube, Scarpa Charmoz

- Buy
 Own
 Rent

Gaiters

Knee or calf height. Best used in early season conditions. Optional for mid and late season. Gaiters do help protect pants from crampon holes regardless of the season.

Examples: OR Crocodile

- Buy
 Own
 Rent

Comfortable Shirts, Pants, and/or Shorts

Comfortable clothing that will be used in the front country and for car camping.

- Buy
 Own

CLIMBING

Helmet

Must be UIAA-rated for climbing. Be aware that foam, break-away style helmets like the ones listed below are susceptible to damage if being loaded in a checked bag.

Examples: Petzl Meteor, Black Diamond Vision

- Buy
 Own
 Rent

Harness

Make sure the harness has a belay loop and Equipment loops. When sizing, it should fit over your clothes when you have multiple layers on. A more robust, padded harness is ideal for this program.

Example Padded Harness: Petzl Adjama, Arc'Teryx AR-395a

- Buy
 Own
 Rent

Two Ice Tools, Adze and Hammer

Ideally, you will have a pair of semi-technical tools with slightly curved shafts, one with an adze, and one with a hammer.

At a minimum you need a semi-technical ice tool with a hammer and a straight shaft ice axe with an adze, however, straight-shafted axes do not perform as well on this program, especially if they are over 55cm in length.

Do not bring aggressively curved ice tools, they are not designed for low angle ice and snow.

Paired Examples: Petzl Sum'Tec Adze and Hammer, Grivel Light Machine Adze and Hammer, Black Diamond Venom Adze and Hammer.

- Buy
 Own
 Rent

Ice Clippers (Optional)

Plastic, universal ice clippers are convenient for racking ice screws and ice tools on your harness.

Example: Petzl Caritool

- Buy
 Own

Umbilicals (Optional)

Elastic umbilicals that attach your tools to your belay loop in case they are dropped can be useful for some of the portions of this course.

- Buy
 Own

Crampons

Must be 12-point steel crampons with front points and compatible with your mountaineering boots. Strap-on or lightweight crampons designed for general mountaineering are not adequate for this course.

- Buy
 Own
 Rent

Slings

Bring one 48in (120cm) and one 24in (60cm) pre-sewn sling. Slings must be UIAA-rated for climbing. Available for sale at our Equipment Shop.

Examples: Mammut Contact, Black Diamond Nylon Runner

- Buy
 Own

Cordelette

A 180cm-240cm length sling or 18-24 feet of 6mm accessory cord can be used as a cordelette.

Example : Mammut Contact, Bluewater Titan Cord

- Buy
 Own

CLIMBING CONTINUED

Belay Device

Bring an auto-blocking device that accepts two ropes.

Examples: Black Diamond ATC Guide, Petzl Reverso

- Buy
 Own

Carabiners

Must be UIAA-rated for climbing. Must have:

- 4 large pear-shaped munter-style locking carabiners
- 5 non-locking wire gate carabiners

Examples: Petzl Attache, Camp Photon Wire

- Buy
 Own
 Rent

Rappel Backup

The Sterling hollow Block or Beal Jammy are recommended for their heat resistant properties.

A 4ft length of 6mm nylon accessory cord will also suffice.

Example : Beal Jammy 35mm, Sterling HollowBlock 2 13.5

- Buy
 Own

Prusiks

You will need 3 lengths of 6mm nylon cord: 13ft, 6ft, and 5ft. We have these as a kit at our Equipment Shop and it is encouraged that you use these as they have been specifically chosen for this course due to their supple nature and high strength. Many types of nylon cord can be stiff and more difficult to work with.

- Buy
 Own

Trekking Poles

One is required, 2 are highly recommended. Poles help with balance while hiking with a heavy pack and increase security during stream crossings. They also decrease the pressure on your knees during steep descents. For early season, poles should have snow baskets.

Example: Black Diamond Expedition

- Buy
 Own
 Rent

Day Pack

A 25L to 35L is an ideal-sized pack. This will be used during rock climbing and can also be used as a summit pack. Ideally, this pack is frameless so that it can be packed inside your larger pack if you decide to bring it on the mountain.

Examples: Black Diamond Blitz 28, Mountain Equipment Tupilak 37+

- Buy
 Own

Internal Frame Pack

A 65L to 75L pack is the recommended size range. Mountaineering specific packs, instead of backpacking packs, are a good way to shave weight. Should also have the ability to carry weight well.

Examples: Black Diamond Mission 75, Mountain Hardware AMG 75, Arc'Teryx Bora 75

- Buy
 Own

CAMPING

Sleeping Bag

Synthetic or down. If you bring a synthetic bag, bring one on the lower end of the temp range since synthetic bags tend not to be as warm as down. If you sleep cold, bring a warmer bag than required. If choosing down, water-resistant down treatment is preferred to help prevent loss of insulating properties if the bag gets wet. Early Season: 0° to 20°F (-18° to 6°C) Mid Season: 20° to 30°F (-6° to -1°C) Late Season: 15° to 20°F (-10° to -6°C) Examples: Mountain Equipment Fireflash, Western Mountaineering Alpinilite, Rab Mythic Ultra 180

- Buy
 Own
 Rent

CAMPING CONTINUED

Tent

3 season tents can be used if the rain fly goes all the way to the ground on all sides. A “bathtub” floor for the inner tent is also recommended. This means that the inner tent isn’t all mesh but has water resistant floor material that scoops up from the floor for 4-12” before changing to mesh, like a bathtub. If there are any questions please consult our Equipment Shop to see if your tent is okay to use.

If your tent does not have wind lines, an additional 6-10 ft of 3mm accessory cord is often needed for rigging your rainfly in a mountain environment.

NOTE: 4 season tents are available to rent at AAI the first morning of the course. There is also the possibility to pair up with other students on your course and share a tent.

Example 4-Season : Hilleberg Unna, Black Diamond Eldorado

Example 3-Season : Big Agnes Copper Spur, REI Half Dome

Early-season: Double wall 4 season tent recommended. (April to Mid-June)

Mid-season: 4 season or 3 season tent. (Mid-June to August)

Late-season: 4 season tent recommended. (Late August to September)

- Buy
- Own
- Rent

Compression Stuff Sack

For your sleeping bag. If it is a down bag, a waterproof compression sack is recommended.

- Buy
- Own

Sleeping Pad

- Early Season: Bring 2. One inflatable and one closed-cell foam. The foam pad helps insulate from the snow and serves as a backup to the inflatable pad.
- Mid/Late Season: One inflatable pad or closed cell foam pad.

Examples: ThermaRest XTherm

- Buy
- Own
- Rent

Stove and Fuel

Liquid fuel and canister stove. Fuel is available at our Equipment Shop the morning of the course.

NOTE: Many people choose to share stoves, fuel, and tents to decrease weight. However, some people prefer to camp in their own tents and use their own stoves. This can be determined on the morning of the first day of your program.

Examples: Soto Windmaster, MSR Windburner

- Buy
- Own
- Rent

Pots

Bring 1 pot.

- Early Season: Bring a bigger pot for melting snow, 1.5L to 2L
- Mid/Late Season: 0.5L to 1L

NOTE: If you have a complete stove system like the Jetboil or MSR Reactor and plan on eating out of your integrated pot, then you do not need to bring another pot.

- Buy
- Own

Utensils

Don't forget the official “most forgotten item”. The spoon or spork. Long-handled spoons make stirring hot liquids safer and metal ones tend not to break as easily in cold temps.

- Buy
- Own

CAMPING CONTINUED

Bowl

- Early Season: Bring a plastic bowl or mug, preferably with insulation
- Mid/Late Season: Bring a plastic bowl, insulation not necessary

NOTE: If you have a Jetboil or MSR Reactor type stove and plan on eating out of your integrated pot, then you don't need to bring a bowl. The same applies if you plan on using commercially packaged dehydrated or freeze-dried meals.

- Buy
 Own

Lighters

Bring 2. You will have the opportunity to buy them the morning of the course.

- Buy
 Own

Hydration

A 3L capacity is recommended, though some people need more.

A common approach is to bring a 2-3L bladder and a 1L hard-sided bottle. The bottle is important as a backup to the bladder if it gets punctured. A hard-sided bottle may also double as a mug for hot water, though not every bottle is designed to hold boiling water.

For Camelbak-style hydration bladders, bring a drinking tube insulator, as the tube can freeze up. Drinking tubes must also have a lock on the bite valve. If you choose to use this system, be aware that it requires constant vigilance to avoid freezing. Be prepared to have to pull your bladder out of your pack to drink, as hoses freezing is a persistent issue on programs.

- Early Season: Bring more water carrying capacity, usually in the form of bladders (4 to 8L) to reduce the number of times you need to melt snow.

Examples: Nalgene 32oz bottle, Hydrapak Seeker 2-3L, MSR Dromedary 4-8L

- Buy
 Own

Water Purification

Water purification of some form is required. The popular tabs that our guides use, Aquatabs, are available at the shop the morning of the course. Pills that take an hour or less to purify are recommended. Steripens are an acceptable alternative to purification tablets. It is strongly encouraged to use the brand Aquatabs, as they work the fastest and have the least amount of flavor once administered.

NOTE: Pumps can be damaged by silt in the glacial water and can easily freeze at night and crack. However, many of our guides are finding success using some of the integrated pump/bladders like the BeFree and Quickdraw

Examples: Aquatabs, Steripen, Katadyn BeFree, Platypus Quickdraw

- Buy
 Own

Food

You are responsible to bring your own food for the duration of the course. Please consult our meal planning page.

You should arrive on the first morning of your course with 6 days worth of backcountry food.

Assume that your first breakfast and last dinner will be in Bellingham.

- Buy
 Own

OTHER ESSENTIALS

Toothbrush and Toothpaste

Travel size recommended

- Buy
 Own

OTHER ESSENTIALS

Hand Sanitizer and/or Wet Wipes

Required. Used after going to the bathroom and before eating. Wet wipes can be used for the "mountain shower."

Buy
 Own

Alarm Clock

You will be responsible for waking up at certain times throughout the program. While your guide can sometimes be your alarm, there are often situations where tents are far apart. Be sure if you use your phone as an alarm that you have enough backup battery to accommodate for this. If you plan to use a watch, be sure your alarm is loud enough to work for you.

Buy
 Own

Toilet Paper

The provided solid waste bags have a small amount of toilet paper with them, but most people do not find this to be adequate. Estimate how much you'll need for a program of this length and place that in a plastic zip-lock bag. An extra zip lock bag can be helpful for pack-out of used paper. If you plan to use wet wipes, be wary of scented or exfoliating types as these can be an irritant for some people.

Buy
 Own

Buy

Pee Cloth (Optional)

A reusable, antimicrobial pee cloth, used in the place of toilet paper or wet wipes.

Example: Kula Cloth

Own

Menstrual Cup (Optional)

There are many things to consider about backcountry menstruation, click on the [link](#) for more information.

Examples: Diva cup, Saalt, Lunette

Buy
 Own

Urination Device (Optional)

Pee funnels such as the GoGirl or Freshette. Rigid pee funnels hold their shape better. Used in conjunction with a pee bottle or while on a rope team. These can help mitigate the need to squat.

Example: Freshette

Buy
 Own

Sunscreen

At least an SPF of 30+. Zinc-based is preferred. Small travel-size tubes are recommended so you can put them in a close-by pocket for easy access.

Examples: ZBlok 45, 2oz containers are a nice size.

Buy
 Own

Lip Balm

Make sure it is SPF Rated.

Example: Blistex Gold Five Star Protection SPF 30

Buy
 Own

ESSENTIALS CONTINUED

Personal First Aid Kit

- Band aids
- Blister Treatment
- Prescription Drugs
- Ibuprofen, etc
- If you wear contacts, make sure you have spares if you can't see without them

Buy
 Own

Repair Kit

- Inflatable sleeping pad patch kit
- Duct tape (can be wrapped around trekking pole or water bottle. Gorilla Tape tends to be the best brand for the mountains).
- Zip ties
- 6-10ft of 3mm accessory cord
- 2 trash bags that are big enough to line the inside of your pack with

Buy
 Own

OTHER OPTIONAL ITEMS

These items are not required, although many are nice "luxury" items that can make your expedition more enjoyable. Remember that a few ounces here and there add up to extra pounds on your back and knees during your expedition.

Gaia Navigation App

Optional smartphone app. Please have the Mt. Baker (all aspects) maps downloaded prior to the start of your course.

Buy
 Own

Map and Compass

Map should be of Mt. Baker Area (Preferably Green Trails Maps #13SX). The compass must have a declination adjustment.

NOTE: These items are available together in a bundle or sold separately at the Equipment Shop and can be purchased the morning of your course.

Buy
 Own

Goggles (Optional)

Optional for April to early May and not needed later in the season. These are used in high winds or heavy rain and can serve as a backup to your glacier glasses. Look for UVA/UVB protection and a lighter lens is recommended for better visibility in flat light. Do not plan to use goggles as sunglasses over your prescription glasses, as it is difficult to see and manage your harness and equipment with goggles on. We recommend the "over the glasses" sunglasses from the company *Cocoon*.

Buy
 Own

Altimeter Watch

If you have one then bring it. It is a great tool to have in the backcountry, especially for navigation.

Buy
 Own

Pee Bottle

Used at night or when the weather is poor so you don't have to get out of your tent. A 32oz or larger capacity is strongly recommended. Many guides use a bladder instead of a bottle to increase capacity.

Example: Hydrapak Seeker 2L, Collapsible 48oz Nalgene

Buy
 Own

OTHER OPTIONAL ITEMS CONTINUED

Portable Charging Device

Phone charger, battery pack, or solar panel. You are responsible for your alarm clock each morning. If you are going to use your phone, be sure you have enough power to accommodate this.

NOTE: Solar panels should only be used to charge battery packs. Battery packs should be used to charge devices. Inappropriate use of a solar charger could lead to the depletion of a device's power.

- Buy
 Own

Ear Plugs

For defense against snoring and high winds

- Buy
 Own

Entertainment

Books, games, cards, music player, kindle, etc. For evenings or down time in the tent.

- Buy
 Own

Insect Repellent

Biting insects such as mosquitoes and blackflies can be prevalent during different times of the season depending upon conditions and location. This is a nice item to have just in case.

Sometimes even a headnet is a nice item to have.

- Buy
 Own

Camera

Phone cameras or small point-and-shoot cameras are preferred. SLR cameras are not recommended due to their size and bulk.

- Buy
 Own

Comfortable Clothing and Footwear

Breathable footwear - like flip flops - as well as some comfortable clothing can be nice to change into after you get back to the van.

- Buy
 Own

Car Charger

Consider bringing an extra battery pack as well, having a lot of people using car charger cables is difficult.

- Buy
 Own