



Alpine Institute

Backcountry Ski Equipment Checklist

This list was designed for the “worst case scenario,” a day out with significant inclement weather. In serious conditions it’s not uncommon for someone to need every piece of clothing and equipment on this list. However, if a program does not encounter significant weather, there may be items here that are not used. Keep in mind that if you run particularly warm or cold it would be a good idea to adjust your layers accordingly. As you prepare for your course, it’s important to plan for the worst and hope for the best.

Please be sure to check the forecast several days prior to your course to ensure that you are properly prepared.

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

[NOAA Paradise Visitor Center in Mt. Rainier National Park Weekly Forecast](#)

PROVIDED EQUIPMENT: AIARE Student Manual, AIARE Field Book

GEAR CONSULTS: You can use [this link](#) to schedule a gear consult before your course to go over any gear questions that you may have.

RENTALS MUST BE TAKEN CARE OF BEFORE THE START OF THE COURSE

CLOTHING

Beanie/Toque (Optional)

Wool or synthetic.

Buy
 Own

Sun Hat

For those blue-bird winter days.

Buy
 Own

Buff/Neck Gaiter

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

Buy
 Own

Sun Glasses or Glacier Glasses

THESE ARE MANDATORY. For use when goggles aren't necessary. Standard sunglasses are fine, but make sure they have UVA/UVB protection.

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

Ski Goggles

For use in high winds and heavy snow and skiing downhill. These should be lightly tinted but not so dark that they will reduce visibility in low light conditions. They should block 100% of UV light. If you wear prescription glasses, these must fit comfortably over your glasses.

Photochromic (variable tint) lenses are highly recommended.

Julbo brand goggles with the airflow feature are nice to have.

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 25°F when it is dry. UPF rated are ideal. Bring 2 pairs in the event that it is extra wet out.

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

Undergarments

Wool or synthetic.

Buy
 Own

Socks

Wool or synthetic socks that are just below the knee, or go above the edge of your ski boot are recommended. Having two pairs on hand is also recommended in case a pair gets wet.

Buy
 Own

CLOTHING CONTINUED

Base Layer Top

This will be your base layer and should be midweight synthetic or wool. No cotton. Should be long-sleeved.

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 Shield.

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

Buy
 Own

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.

Buy
 Own

Soft Shell Pants

Thin, weather-resistant, breathable, and stretchy. This layer is helpful if the weather is nice enough and dry enough, where having a more breathable layer than a hard shell might be more comfortable, typically late winter/early spring.

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

Buy
 Own

CLOTHING CONTINUED

Hard Shell Pant or Ski/Snowboard Pant

Non-insulated, waterproof and breathable membrane. Full side zips are recommended. When sizing make sure it is able to fit over a base layer and soft shell pants. Having a front pocket that is Avalanche Beacon compatible can be helpful.

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

Examples: Patagonia Torrentshell, Arc'Teryx Beta Pant

- Buy
 Own

Note About Pants If you are wearing ski/snowboard pants, then that layer should suffice, consider adding a base layer for additional warmth. However, if you do not have ski specific pants, then you will want to stick to the base layer, soft shell layer and hard shell layer combination. Please feel free to reach out to the AAI Equipment shop with any further questions.

Gaiters (Snowshoers only)

Mid-calf to Knee height. Keeps snow and ice out of your boots and socks from snowshoeing through deep, wet snow. Check the fit of the gaiter to your boot in advance to make sure the coverage is adequate. Can omit if your pants have a built gaiter and scuff guard.

- Buy
 Own
 Rent

SKIING AND AVALANCHE EQUIPMENT

We allow skis, splitboards, or snowshoes for this course. Any of these types of snow locomotion are acceptable, though snowshoes are often less common and not as desirable because they are not as efficient. If you are skiing or splitboarding you must have prior experience with your set up. This is NOT the appropriate course to be using a backcountry set up for the first time.

Helmet

A ski or snowboard specific helmet is necessary for this course. Preferably a helmet with Multi-directional Impact Protection System (MIPS). Ensuring that your helmet fits properly is critical for safety and comfort.

- Buy
 Own

Skis

Skis with a backcountry flex (softer) are preferable to skis designed for hard packed lift serviced skiing. You may choose to bring either telemark skis or alpine touring skis. Telemark skis must be equipped with full metal edges. If you use a cable binding, bring a spare cable. Equip your skis with runaway straps. Alpine touring skis should use bindings that allow for forward and lateral release.

- Buy
 Own
 Rent

Ski Boots

We strongly encourage the use of randonee (AKA AT or alpine touring) equipment. If you are an experienced telemark skier, modern telemark gear will also be accepted. Make sure your boots fit you snug enough for downhill performance, but are comfortable enough to keep your toes warm. The hinge should be flexible enough to allow for comfortable walking, even for long distances. They must be equipped with a deep rubber lugged sole.

- Buy
 Own
 Rent

SKIING/AVALANCHE CONT.

Avalanche Probe

230cm minimum. If you are in the cascades with an especially deep snowpack then a 320cm probe is recommended. Required even if bringing 'probe poles'. Carbon fiber is lighter and suffers less deflection than aluminum models. Look for a model that has graduated depth markings for use during snow pit studies.

- Buy
 Own
 Rent

Ski Poles

Adjustable trekking poles with a full size basket are recommended. Ski/Probe poles are not a substitute for the avalanche probe.

- Buy
 Own
 Rent

Skins

For PNW, skins with more traction are recommended over skins with more glide.

- Buy
 Own
 Rent

Avalanche Beacon

Your beacon MUST be a modern, 3 antenna, single frequency (457kHz) beacon. If your beacon is older than 5 years, you should consider retiring it or returning it to the manufacturer to have it tested for function and frequency drift. 2 antenna beacons are obsolete.

- Buy
 Own
 Rent

Shovel

We require metal (aluminum) shovels. Newer models are lighter, stronger, more packable, and more ergonomic than older ones. Avalanche shovels now have a UIAA rating, so keep that in mind when shopping. Additionally we recommend a mid-sized blade that can fit in your pack. Smaller blades don't move enough snow, and larger blades move too much snow where efficiency is lost. A shovel that has a hoe-mode and snow profile friendly blades are also a bonus.

- Buy
 Own
 Rent

Day Pack/Ski Pack

25L to 35L is an ideal size. Whatever you need to use for a full day out. For a Ski specific pack, your pack should fit well, move with you, and not be a major hindrance when downhill skiing. Choose a model with ice axe loops and straps to carry your skis easily. Some models feature additional avalanche features such as an "Avalung" or airbags.

- Buy
 Own

Hydration

2 - 3 liters of water capacity minimum. Two or three water bottles, usually one- liter wide mouth Nalgene type, are required. Narrow mouth bottles are not functional and should not be used. Other similar plastic bottles (e.g. Gatorade) can work also. Hydration packs are not recommended, once they freeze they stay frozen for the duration of the course

- Buy
 Own

Water Bottle Parkas

These are insulating jackets for your water bottles, one for each bottle. Must cover the entire bottle, including the lid.

Examples: 40 Below

- Buy
 Own

Food

Please arrive with food for the day.

- Buy
 Own

OTHER ESSENTIALS

Hand Sanitizer and/or Wet Wipes

Used after going to the bathroom and before eating.

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.

Buy
 Own

Sunscreen

SPF 30+, zinc based is preferred. Small travel size tubes are recommended so you can put them in a close by pocket for easy access. Sunscreen is prone to freezing in the cold and smaller containers fit well into pockets for warming. Some manufacturers make sunblock in the form of a stick for easy application while wearing heavy gloves.

Buy
 Own

Lip Balm

Make sure it is SPF rated.

Buy
 Own

Garbage Bags

Bring one large bag to line your backpack and one to pack out garbage. Trash compactor bag, if available, are more durable.

Buy
 Own

Multi-tool

Any multitool similar to a Leatherman is great. Make sure to bring any specialized tools that might be required to fix bindings or snowshoes in the field.

Buy
 Own

Ski Straps

Required for keeping your skis attached to you so that your skiing doesn't turn into a walking trip, this can be added to your repair kit.

Buy
 Own

Personal First Aid Kit

- Band aids
- Blister treatment
- Prescription drugs
- Ibuprofen etc.
- If you wear contacts make sure and have spares if you can't see without them.

Buy
 Own

Repair Kit

- Extra snow baskets for trekking/ski poles
- Gorilla tape (Can be wrapped around trekking poles or water bottle. Gorilla Tape tends to be the best brand for the mountains.)
- Zip ties-6-10 ft of 3mm accessory cord

Buy
 Own

OTHER OPTIONAL ITEMS

Gaia Navigation App

Optional Smartphone App.

Buy
 Own

Map and Compass

Map should be of the area you are conducting your field days. Compass must have declination adjustment.

NOTE: Green Trails maps work best.

Buy
 Own

Headlamp

Bring extra batteries, or if it has a rechargeable battery, make sure and bring a charger. 200-350 Lumens is an ideal range

Buy
 Own

Lightweight Balaclava / Buff

A balaclava is a warm hat that can be pulled over the head to the shoulders. It completely covers the head except for an opening for the face. It should provide excellent wind protection for the chin, ears and neck. A Buff can substitute for this.

Materials: Powerstretch, fleece, polypro, windpro

Buy
 Own

Pee Cloth (Optional)

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

Example: Kula Cloth

Buy
 Own

Urination Device (Optional)

Pee funnels such as the GoGirl or Freshette. Used in conjunction with a pee bottle or while on a rope team. Can help mitigate the need to squat.

Example: Freshette

Buy
 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

Hand / Foot Warmers

Recommended for people that are susceptible to cold hands and toes. These should be small, disposable type products.

Buy
 Own

Ski Crampons

Most useful for March courses. These come in a variety of widths, be sure yours are wide enough to fit over your skis.

Buy
 Own

Small Foam Pad

Can be useful for sitting or kneeling during field instruction. Your pack can also serve this purpose.

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