



Wilderness Equipment List (Side One)

Please note that HMI has a limited supply of rental items. Filling out your Equipment Rental & Purchase Reservation form online (found at: <http://www.hminet.org/semester/accepted-students>) or mailing it on time will help ensure these items will be available for you to rent or purchase before your first expedition. One advantage to renting gear is that it will give you the opportunity to try the gear before you buy it. **You will need to fill out the online Rental Reservation form or mail in the Rental Reservation form that is included in this packet to guarantee availability.**

* signifies gear that can be rented from HMI.

** signifies gear that can be purchased from HMI.

You will need **all of the items** on this list for the backcountry expeditions. It is very important that you can wear all of your layers at the same time. If you cannot wear them at the same time, your clothing will be too tight and constrict blood flow, and therefore not keep you warm. Your sizes may need to be progressively larger in size to accommodate this. Lightweight and compressible clothing and equipment will make your pack lighter and easier to pack.

Please remember to put your name on everything.

BACKPACK AND OTHER STORAGE BAGS

- *Backpack (**Please read the Equipment Information page very carefully.**)
- **3 Heavy Duty Trash Compactor or Contractor plastic bags
- *Day Pack (Standard school backpacks are typically too bulky to use here. 1200-1800 cubic inches or 20-30 liters)
- *1-2 Small Stuff Sacks (These help you organize items in your pack. These are optional.)
- **Zip-Lock® Bags (1 Gallon size, to protect cameras, books and toiletries in your backpack.)

SLEEPING GEAR

- *Sleeping Bag (synthetic, 0 degree) (**Please read the Equipment Information page very carefully.**)
- *Compression Stuff Sack (large stuff sack with 3-4 straps, used to compress your sleeping bag)
- *Sleeping Pad, full length (Closed cell foam pad or Therm-A-Rest®. If Therm-A-Rest® type, you must also have a repair / patch kit.)
- *Sleeping Pad Stuff Sack (**This is required** to protect your pad from tree branches, etc.)

BOOTS AND FOOTWEAR

- Hiking Boots (**Please read the Boot Fitting Information page very carefully.**)
- **5-6 pairs of Wool or Synthetic Socks
- **Gaiters (full-length, long) and oversized to fit larger boots, i.e. ski boots
- Old Running Shoes or Sneakers (An old, inexpensive, and lightweight pair to wear around camp.)

LOWER BODY LAYERS

- **Expedition or mid-weight long underwear bottoms (Patagonia Capilene®, other synthetic, or wool)
- *Wool Pants or Fleece Pants (such as Patagonia expedition weight (EW) Fleece or R1 Pants)
- *Wind Pants (such as Patagonia Integral Pants) (**Please read the Equipment Information page very carefully.**)
- Shorts (nylon, athletic, or hiking shorts such as Patagonia Baggie Shorts -- pockets are nice)
- *Rain Pants (such as Patagonia Rain Shadow Pants)

UPPER BODY LAYERS

- **T-shirt to hike in (such as Patagonia silk weight t-shirt or a cotton shirt)
- **Expedition or mid-weight long underwear top (such as Patagonia R1 or Capilene®, other synthetic, or wool)
- *Lightweight wool Sweater, Fleece Pullover, or Fleece Jacket (such as Patagonia R2, other synthetic, or wool)
- *Fleece Jacket or mid-weight synthetic "puffy" jacket (such as Patagonia R4 full zip or Mountain Hardwear Compressor Jacket)
- *Hooded Rain Jacket (such as Patagonia Rain Shadow) (**Please read the Equipment Information page very carefully.**)
- *Extra warm synthetic "puffy" jacket (such as Patagonia Puff Jacket or DAS Parka; very large to fit over other layer; especially nice for spring semester)

TURN OVER; THERE IS MORE ON THE BACK!



WILDERNESS EQUIPMENT LIST (Side Two)

HEAD LAYERS

- **Wool, Fleece, or Synthetic Hat
- *Balaclava (fleece or polypropylene) or Fleece Neck Gaiter or Wool/Fleece Scarf
- **Sun Hat (baseball hats are fine)
- **Sunglasses (lenses must block 100% UV rays) (If you wear glasses instead of contacts, we recommend prescription sunglasses.)
- **Eye Glass / Sunglass Retainer Strap
- Prescription Glasses and Contacts (If you wear them, bring a spare pair as back-up)

HAND LAYERS

- **Synthetic Glove Liners
- **Mid-weight fleece or wool gloves
- **Winter mitten system (wool or fleece mittens with shells for colder expeditions)
- **Work Gloves, leather (for splitting wood and service projects such as trail work)

MISCELLANEOUS PERSONAL GEAR

- **Headlamp (lightweight and durable LED model, such as Petzl® *Tikka* or Black Diamond® *Cosmo* or *Gizmo*)
- **2 1-Liter Water Bottles (wide mouth liter bottle, or one liter bottle *and* one bladder type hydration system)
- **Half-liter Nalgene® water bottle for use as a cup (it is preferable to have a cup option that seals)
- **Plastic Bowl (16 oz. Nalgene® Lexan wide mouth container with lid or similar Tupperware®)
- **Lexan or Plastic Spoon (No knife or fork needed.)
- **Lip balm (SPF 15 or greater.)
- **Sunscreen (SPF 15 or greater. Do not bring the jumbo size.)
- **Bandanas (1 or 2)
- **Lighters (2-3 small disposable lighters work fine.)
- Toiletries (toothbrush and small tube of toothpaste, brush or comb, skin lotion, tampons. Travel size is plenty for wilderness trips. HMI will provide soap for trips.)
- Underwear (Cotton underwear is better than nylon for women. Most women prefer sports bras. Patagonia Sport Top and Silkweight boxers are good options.)
- Watch (waterproof athletic type; should have an alarm on your watch)
- Personal prescription medication (must be listed on student's medical form)
- **Case for sunglasses
- Pocket Knife (such as a small, simple Swiss Army knife)
- **Camera and Extra Film (Avoid heavy lenses. 35mm compact cameras or single use cameras are usually sufficient.)
- Extra Camera Battery
- **Ski Goggles

THINGS TO BRING ONLY IF YOU ALREADY OWN THEM

- Vest (such as Patagonia Puffball Vest® or fleece vest)
- *Telemark Boots (Spring semester students only)
- *Telemark Skis and Ski Poles (Spring semester students only)
- *Climbing Skins (Spring semester students only)
- *Insulated puff pants (Spring semester students only)

Clothing Details

Please pay careful attention to our description of the following items you will need, and be sure to follow our guidelines when considering a substitute. If you are confused or unsure, give us a call at 791-496-8200. Ask for Justin at ext. 111. Feel free to call us directly from a store, and we'll talk with you and/or the sales clerk.

THE ART OF LAYERING

Having the proper clothing on your Semester expeditions is the key to your comfort. By using the "layering" principle, you will be comfortable in a wide variety of conditions. The secret to this approach is to wear just the right amount of insulation to match your workload. Insulation comes from trapped air in the fabric fibers and between each layer. The recommended fabrics will keep their loft when wet and, therefore, keep you warm. **Cotton will not keep you warm.** The following is the best system for your layering technique:

1. BASE LAYER

The inner layer should be something thin and light such as a T-shirt or long underwear made of wool or a synthetic fabric such as polypropylene or Capilene®. These fabrics are effective at wicking moisture away from the skin. Cotton T-shirts are cool when hiking, but cold when wet. If you perspire heavily as you hike, it will be to your benefit to have a dry layer to put on when you stop.

Examples of base layers: Patagonia Capilene® 2 (shown below), Smartwool Midweight NTS®, Marmot Midweight®, Arc'teryx Rho AR®



2. SECOND LAYER

The next layer is the insulation layer for warmth. Sweaters, shirts, pullovers, tights and pants made of polar fleece, polypropylene, or wool are the most effective insulators. An alternative 2nd layer is a lightweight synthetic fill jacket. Colder students are encouraged to bring an additional 2nd layer.

Examples of 2nd layers: Patagonia R2® or R4® (to right in black), Smartwool Wintersport®, Marmot Reactor®, Arc'teryx Delta SV®, North Face Denali® Jacket

Example of alternative/additional 2nd layers: Patagonia Nano-puff, Mountain Hardwear Compressor Jacket (shown below in red)



3. HEAVY INSULATION LAYER

Over the two base layers can go your final layer of insulation: a heavy puffy jacket. This additional layer provides extra warmth on cold mornings and nights in camp. The puffy jacket should have **synthetic fill**. Synthetics will keep you warm if you get damp, whereas a down jacket will lose all of its insulation properties if it gets wet. **If you choose to bring a down jacket, do not expect to bring it on expeditions.** Lightweight synthetic-fill jackets are *not* appropriate in this category. They are better suited as a second base layer.

Example of heavy insulation layer: Patagonia DAS Parka® (shown below)



4. OUTER LAYERS

The outer layer protects the other layers and yourself from the wind and rain. This layer includes rain gear and wind pants.

RAIN GEAR/SKI JACKET (SHELL) SPECIFICS

You must bring a hooded rain jacket *and* rain pants. Both of these items must be waterproof. Rain layers should fit over all of your other layers, so you will most likely need these in a size larger than you normally wear. Be sure the jacket comes below your waist and has a good hood. In the spring semester, this jacket will also serve as your ski jacket. For rain pants, it is very nice to be able to put them on over your boots, so look for a pair with a zippered cuff.

When buying rain gear, be careful. The outdoor clothing industry has varying ideas of what is waterproof. Some of the very lightweight nylon jackets will not keep the rain out. In addition, ponchos are not acceptable. Whatever you buy, it must be waterproof. Verify its waterproof-ness by pouring water on it or by holding the material up to your mouth and attempting to breathe through the fabric. If you cannot move air through the material, then most likely water cannot move through it either.

The bottom line: Look for rain gear that is made of coated nylon or Gore-Tex®. A synthetic shell of Gore-Tex® works well as a raincoat. Gore-Tex® is expensive but highly wind and waterproof while still being somewhat breathable.

Examples of rain gear: Patagonia Rain Shadow® (shown at right), REI Ultra Light® Jacket, Arc'teryx Alpha SL® or Beta AR®, Marmot Precip®, Montbell Particle® or Versalite®



OPTIONAL FOR SPRING SEMESTER: INSULATED SKI JACKET

In the spring semester there will be days of skiing at the local ski hill, and some students might prefer wearing an insulated ski jacket. However, these heavier jackets are not appropriate for backcountry winter expeditions. On the winter expedition, spring semester students will use their rain jacket as their outer most layer.

WIND/HIKING PANTS

Wind pants are lightweight, breathable, nylon pants, including soft shell hiking pants. They do not need to be waterproof. They should be large enough to wear over all of your layers. Side zippers on the legs are especially nice for putting them on and off over hiking boots.

REI Acme® Pants, Marmot DriClima®, Arc'teryx Gamma LT® Pants



Examples of wind/hiking pants: Patagonia Roving® Pants, REI Sahara Convertible® Pants (shown at right),

Sleeping Bags

We recommend synthetic filled sleeping bags (e.g. Quallofil®, Hollofil®, Polarguard HV®, etc). We do not recommend down sleeping bags. If they get wet, they cease to insulate and can take days in the field to dry. For this reason, **we will not allow students to use down sleeping bags on expeditions** and we will require them to rent one of our synthetic bags. You will want a sleeping bag that is rated to 0° F. The overall weight of your sleeping bag should be about 4 to 4 ½ pounds. If it is much heavier than that, it may not compress well in a stuff sack. It is essential that you choose a sleeping bag that has a hood to go around your head. The hood makes a big difference in keeping you warm at night.

Examples of sleeping bags: Mountain Hardwear Lamina® 0°F (shown at bottom left), Montbell Super Stretch Burrow Bag® #0 (shown at bottom right), Big Agnes Whiskey Park® 0°F, Sierra Designs Nahche® 0°F



Pack Purchasing & Fitting

If you have any questions, please feel free to email us at hmi@hminet.org or call us at 719-486-8200. Ask for Justin at ext. 111.

EXPEDITION BACKPACKS

You will want to purchase an internal frame backpack. Your backpack should have a minimum capacity of **5500 cubic inches (90 liters)**. It should also have a top pocket (often called the “brain”). The shoulder straps and hip belt should be well padded. Look for a pack that has minimal straps, zippers, and side pockets. These simply add unnecessary weight. We have plenty of high quality Osprey packs for rent, consider renting from HMI particularly if you are shorter than 5’5” (it is hard to find large packs with small frame sizes).

Regardless of what brand you purchase, please be sure the salesperson takes time to fit your backpack properly to your back. Frame size is important and will affect your comfort when you are carrying a full pack. Many companies size their packs by your height. This can work, but it is best to measure your torso length (shoulders to just above your hips). If you are a smaller person, a 5500 cubic inch pack may be too big for your frame. Purchase the biggest pack that ALSO fits your torso. As a reference, someone who is 5’10” usually uses a medium size frame. Be aware also that your waist size may differ from your frame size. When determining your waist size, measure the narrowest part of the waist (generally around where the belly button is). The waist belt does not go directly around this part of the waist, but will slide down to balance on the hip bones. It is necessary to find a pack that fits both your torso and your waist comfortably.

There are also packs specifically designed for women. These packs are shorter in the torso, wider in the hips, and narrower in the shoulders. For smaller women in particular, it is worth trying these packs. Again, if you are a small person, choose the biggest pack that fits you (it need not necessarily be 5500 cubic inches if you are five feet tall). In the end, fit is much more important than capacity, and it is fine to choose a smaller pack.

That said, don’t be afraid to go big on space. It does not mean that you will carry more. It means that you will have a much easier time packing your pack, especially with cold hands. Remember, you can cinch down a pack to make it smaller, but you cannot make it bigger. (Strapping additional gear to the outside of your pack is not a good option.)

Examples of backpacks: Osprey Xenon® 85, Osprey Argon® 85, Gregory Whitney® 95, Gregory Deva® 85 (shown at right), Montbell Expedition®, Arc’teryx Bora® 95

There are many other good packs out there; however, keep in mind that you should not have to spend more than \$350-\$450 on a quality pack and sub-\$300 options exist. **Remember, you can also rent a pack from HMI.**



LIGHTWEIGHT DAYPACKS

A lightweight daypack will be used both around campus and in the field. It should be approximately 1200 to 1800 cubic inches (20-30 liters). School backpacks are usually too bulky to use as a lightweight daypack on expeditions because they are difficult to pack in your larger backpack.

Examples of daypacks: GoLite Ion®, Integral Designs Silcoat® Backpack, Mountain Hardware Scrambler, REI Flash® 18 Pack, Vaude Rock Ultralight® 25 (shown at right), Black Diamond Hollowpoint®

Remember, you can also rent a daypack from HMI.



Boot Fitting Information

Your hiking boots may be the most important piece of equipment you will buy. You can avoid many foot problems (blisters, cold feet, etc.) by purchasing properly fitted boots. Please take extra time and care when buying your boots. Our information on boot fitting is relatively universal. If you end up with a salesperson that does not understand these instructions, switch to someone else. (Often times, salespeople do not understand the kind of terrain and weather you will encounter during the Semester. **When in doubt, follow our instructions, not that of the clerk in the store. Remember that he/she has probably never been an HMI student.**)

WHAT TO BUY

You should purchase a sturdy, off-trail, **backpacking** boot, not a mountaineering boot. They should be a medium to heavyweight, ankle-high boot that provides good support for off-trail hiking. Please fit your boots for **2 pairs of heavy wool socks** (not a liner sock and heavy sock; two pairs of Smartwool® socks will be fine). This is very important because we hike in a variety of environments and weather conditions, including snow. You may want the extra cushioning and warmth that two pairs of wool socks provide. In addition, on extended backpacking trips, feet tend to swell slightly, so larger boots provide more flexibility.

We recommend the following boots: Asolo TPS 520 GV® (shown at right), Merrell Perimeter Gore-Tex®, Merrell Wilderness®, Scarpa Summit GTX®, Scarpa Sundowner GTX®, Salomon Explorer GTX®, Tecnica Nepal GTX®, Tecnica Galaad II NB®



If you find different boots of comparable quality and construction, they may be fine. Please call if you have any questions.

TIPS FOR FITTING YOUR BOOTS:

- 1) Shop for boots in the afternoon because your feet swell during the day.
- 2) Boots that are too small will cause more problems than boots that are too large. Start with a boot that is one size larger than your normal shoe size.
- 3) Boots should fit comfortably with two pairs of heavy wool socks. Please do not let the salesperson talk you into a different sock arrangement. In our experience, many students who have had foot problems bought boots that were fitted with one pair of wool socks and a very thin liner sock.
- 4) Most likely, the boot that fits you best will feel a little large and look huge. When you walk around the store, your heel should lift up slightly, but not be sloppy. Your toes should have enough room to wiggle.
- 5) Once you have found a pair of boots that feel comfortable walking around the store, test them for a proper fit. Lace the boots (snug but not tight) and then kick your foot against the wall. Your toes should just nudge the front of the boot on the 3rd kick. If your toes hit on the 1st or 2nd kick, the boots are too small. (You do not want your toes to jam into the front of your boot when walking downhill.)
- 6) You should be able to slide a finger between your heel and the back of the boot.
- 7) Finding the proper fit takes time. Please be patient. It is worth it to try on lots of different boots because different brands and models fit differently. Their internal shapes vary. Also, do not forget to try a size larger.
- 8) **Remember, sizing bigger is better.** As they are broken in, leather boots will actually shrink over the years.
- 9) Be aware that replacement insoles such as Super Feet® can change the way a boot fits by raising the height of your heel in the boot. It is best to try on boots with the insoles you plan on using. If you have foot problems or concerns, see a podiatrist to be accurately diagnosed and properly treated. If you do use orthotics or insoles such as Super Feet®, please bring the original insoles to your boots with you to HMI.

WHAT NOT TO BUY

Please do not buy lightweight hiking boots. Remember, you want a backpacking boot that is made to support you while carrying a heavy backpack. You may be hiking off trail through terrain such as loose gravel, snow, scree, mud, streams, and tall, wet grass for 7-14 days in a row.

NEW BOOTS

Once you have new boots, there are a few things you should do: Waterproof them by putting several coats of SnoSeal® or Nikwax® on them; and break in your new boots by walking or hiking in them before coming to HMI (see the fitness plan).

