



NASA Leadership Expedition Equipment List



Welcome to NOLS!

Learning how to choose the right equipment for your adventure is an essential part of the NOLS curriculum. We believe that you don't need to own a lot of expensive equipment or clothing to live and travel comfortably outdoors. This document is designed to help you make smart decisions about what you take on your course, and where you can get those items. We hope this document will help you feel more confident about entering your course.

NOLS offers select items for rent and purchase in our equipment departments, in order to help support you getting the gear you need. Use this list to guide your decisions in what to purchase or rent from NOLS, and what to bring with you from home.

Equipment Fees

Certain NOLS gear is included in your course to borrow for no charge. You can see this list below both on page 2 under items to borrow and in the equipment list (labelled as NOLS Provides). If you would like to purchase any gear outside of these items, you will be billed for those items post-course. Approximate costs are listed in the equipment list under the buy column.

Questions?

Contact your Admission Officer if you have any questions or would like further information about the equipment list.

Feedback?

NOLS is trying to update this list to be more welcoming and effective. If you are willing to provide some feedback to help our effort please take this [survey](#)

How to Use This Document

First, there is an at-a-glance **Packing Checklist** for your expedition below. This summarizes all items that you will need for your course.

Next, scroll further for a more detailed **Equipment List** that includes descriptions for each item, their availability at the campus, their purchase and rental prices (if applicable), as well as suggestions to help you decide what you want to bring from home, and what you want to buy/rent from NOLS.

Use both lists to help you prepare for your expedition.

Here are some thoughts to guide you as you pack:

- **First, use what you already own!** You'll be the most comfortable in the clothing you already have, use this guide to determine what you have at home that may work for your course.
- **Second, borrow key items from NOLS.** We recommend that you use, rather than purchase, several of the “big ticket” or “specialized” items from NOLS

Insulated Jacket	Backpack	Compression Sack
Wind Shirt	Stuff Sack X 3	Sleeping Pad
Fleece Pants	Sleeping Bag	Plastic Trash Bag X 3
Wind Pants	Sit pad	Lighter

- **Third, purchase items from NOLS.** Every campus offers a variety of equipment, clothing, and personal care items for purchase. Approximate price ranges for the items we sell are listed below - you can use these prices to help you decide whether to purchase items ahead of time. If there is an X in a column it means it is not available.
- **Fourth, go shopping before your course.** A few options: REI or a local gear store, Target, Wal-Mart, and other department stores, Thrift stores, and Online. We encourage you to keep the tags/receipts for all purchases, so that you may later return any items you don't use.

Packing Summary Checklist

Upper Body Clothing	Lower Body Clothing	Head, Hands & Neck
☐ Long underwear top (base layer) ☐ Fleece sweater/jacket (middle layer) ☐ Insulated/puffy jacket ☐ Wind jacket/shirt ☐ Rain jacket ☐ Sports bra (1-2) Optional: ☐ Sun hoody ☐ T-shirt	☐ Long underwear bottom (base layer) ☐ Fleece Pants (middle layer) ☐ Wind/hiking pants ☐ Underwear (2-3 pairs) Optional: ☐ Shorts ☐ Rain Pants	☐ Baseball/sun hat ☐ Warm hat/beanie ☐ Liner/lightweight mittens/gloves Optional: ☐ Neck gaiters ☐ Warmer mittens/gloves ☐ Mosquito head net
Feet	Packs	Sleeping Gear
☐ Hiking boots ☐ Camp shoes ☐ Wool socks (3-4 pairs) Optional: ☐ Gaiters ☐ Liner socks	☐ Backpack ☐ Stuff sacks (3) ☐ Trash bag liners	☐ Sleeping bag ☐ Sleeping mat ☐ Compression sack Optional:
Misc.	Toiletries	
☐ Bowl & Spoon ☐ Water bottle (2) ☐ Headlamp & Batteries ☐ Bandana (1-2) ☐ Watch ☐ Lighter ☐ pen/pencil & journal ☐ Sunglasses & keeper strap ☐ Prescription glasses and/or contacts if used	Optional: ☐ Book or e-reader ☐ Trekking pole (1) ☐ Camera ☐ Camp chair ☐ Hydration system (alternative to water bottles) ☐ Pocket knife	
<i>Make sure to reference the equipment list for which items you are able to rent/buy from NOLS. BOLDED items NOLS will provide for you at no charge.</i>		

Equipment List - Item Descriptions and Notes

Upper Body Clothing

Your clothing will form a layering system of base layers, mid-layers, and shell layers. The base layers are designed to wear close to your skin and provide moisture management, light insulation, and sun protection. Warmer mid-layers are for insulation and need to fit well together to give you options as conditions change. On the outside, wind and rainproof jackets prevent heat loss by cutting wind, rain, and snow. Look for synthetic materials that dry quickly and retain their warmth when wet, which cotton does not do.

Our advice? Bring the non-cotton sweaters, fleece jackets, athletic clothes, and synthetic layers you think might work. We'll advise you on the best combination for your trip, depending on conditions.



Item	Rent	Buy	Notes
Long Underwear Top (base layer)	X	\$70	Mid-weight long underwear top, wool or synthetic (e.g. Patagonia Capilene, Terramar Performance, Icebreaker Body Zone), Hoods encouraged
Fleece Jacket/Sweater (middle layer)	X	\$50-180	Fleece jacket (e.g. Polartec 100 or 200, Capilene 3 or 4), or a wool sweater. For use in cooler or windy conditions.
Puffy Jacket (Insulating layer)	NOLS Provides	\$95 -220	A warm "puffy" jacket that fits over your base/mid layers, either down or synthetic fill. On May courses, we recommend 2 "puffy" layers, one lighter jacket (or fleece jacket, see above) and one heavier jacket that has synthetic or down fill. Lighter puffy jackets include Mountain Hardwear Compressor, Montbell Thermawrap, Patagonia Nano Puff. Heavier puffy jackets include North Face Morph, Patagonia Das Parka.
Wind shirt	NOLS Provides	\$55 -100	A lightweight, breathable, durable nylon wind shell.
Rain Jacket	\$20	\$100 - 150	Durable, waterproof, jacket with hood. Waterproof-breathable fabrics (e.g., Gore-Tex, H2No, etc.) are both acceptable. It is important that your rain jacket fits well over all your base and insulating layers
Sports bra (1-2)	X	\$40	Lightweight bras that offer adequate support. Synthetic or natural fibers that dry quickly are preferable.

Optional Items

Sun Hoody	X	\$60-70	A lightweight synthetic, wool, or bamboo hoody that provides both sun protection and as a base layer.
T-shirt	X	\$25-50	A lightweight synthetic or wool t-shirt

Lower Body Clothing

Similar to your upper body clothing, you will be layering your lower body clothing and will most likely need 1–2 synthetic insulating layers (usually a base layer and, in early summer, a pair of warm pants). All must fit comfortably over each other so they can be worn simultaneously. If you tend to get cold easily, add a middle layer of mid-weight bottoms to the base layer and fleece or puffy pants.



Long Underwear Bottoms



Shorts



Hiking Pants



Fleece OR Puffy Pants



Rain Pants (Optional)

Sports Bras,
Boxers,
Underwear
(2 - 3 Pairs)

Item	Rent	Buy	Notes
Long Underwear Bottom (base layer)	X	\$70	Mid-weight synthetic or wool bottoms (e.g. Patagonia Capilene, Terramar Performance, Icebreaker Bodyfit Zone), primarily used for sun protection on the water.
Fleece/Puffy Pants (middle layer)	NOLS Provides	\$60 - 200	Mid- or heavy-weight bottoms that fit comfortably over the base-layer bottoms for use in camp. Fleece pants or synthetic blend.
Wind pants/hiking pants	NOLS Provides	\$80	Nylon or synthetic pants. These should fit comfortably over lower-body base layers. Soft-shell fabrics are acceptable, but lightweight “running pants” are not durable enough.
Underwear (2-3 pairs)	X	\$20 - 35	Clean underwear is essential for backcountry hygiene and you will likely have opportunities for laundry on your course. Synthetic or natural fibers (non-cotton) are great options.

Optional Items

Nylon shorts	X	X	Loose-fitting nylon athletic or swim shorts.
Rain pants	X	\$80-110	Although not required, some people like to use rain pants in conjunction with a rain jacket.

Head, Neck and Hand Layers

Equipment	Rent	Buy	Notes
Sun hat/Baseball hat	X	\$15-45	Must be wide-brimmed. A baseball cap works fine.
Wool or fleece hat	X	\$20 - 35	Warm, thick hat for cold nights. Should cover your ears. Wool or fleece are ideal.
Liner Gloves/mittens	X	\$15	Lightweight, synthetic glove liner

Optional Items

Neck Gaiter/ Buff	X	\$22	Neck gaiters are synthetic pieces of multi-functional headwear (hat, bandana, neck warmer, etc.). Buff is a common brand.
Warmer gloves/ mittens	X	\$18-65	Fleece or wool, can be combined with a thin liner glove and/or mitten shell. Recommended for courses that start in May/June, or fall courses.
Mosquito head net	X	\$5	A light, nylon head net. Can also double as a hair net.
Hair Care Headwear	X	X	Wave cap, hair wrap, or bonnet whatever you are used to. Cotton, satin, or synthetics are all good.

Packs and Bags

An expedition backpack is a major purchase. If you don't already own one, we think you should rent ours, gain some experience, then make an informed decision after your course on what you might want to buy for future trips.

Equipment	Rent	Buy	Notes
Backpack	NOLS Provides	\$300	Our packs are large expedition models with a volume of 80 –100 liters. We recommend you rent one of our packs. If you bring a backpack, your instructors will examine it to determine its suitability for your course and route. It must have a volume of 80 –100 liters.
Stuff Sacks (2-3 small ones)	NOLS Provides	\$10-20	Small nylon sacks for organizing items in your pack
Trash Bag (2-3)	NOLS Provides	\$1	2 heavy-duty lawn-and-garden/contractor bags (48 gallon/3 mil) to help waterproof your sleeping bag and backpack.

Sleeping Gear

A sleeping bag is another major purchase. If you don't already own one, we think you should rent ours, gain some experience, and then make an informed decision after your course in what you may want for future trips.

Equipment	Rent	Buy	Notes
-----------	------	-----	-------

Sleeping bag	NOLS Provides	\$220-350	Synthetic-fill bags (e.g. Thermolite, Thermal.Q, APEX, etc.) perform well in the variety of conditions we encounter on courses. A bag rated to 0° or 15°F. Fall and spring semester students will also need a separate bag for the winter section (synthetic filled bag rated to at least -20°F).
Compression sack	NOLS Provides	\$40	Stuff sack with compression straps designed to compress your sleeping bag when not in use
Foam or inflatable sleeping pad	NOLS Provides (foam)	\$35-220	Used for padding and insulation between sleeping bag and ground. Foam pads, which we rent, should be closed-cell and at least 3/8-inch thick and have at least an R-Value of 2.0. Inflatable pads, which we don't rent, work as well; Therm-a-Rest and REI are reliable brands.

Optional Items

Ground cloth	NOLS provides	X	Waterproof nylon sheet to layer between sleeping pad and ground for extra warmth. Helps protect your gear from sand, dust, and dirt.
--------------	----------------------	---	--

Footwear

Your boots will be a critical piece of gear. If they aren't sturdy, don't provide enough support, or don't fit properly with wool socks, won't let you use them. If you have any doubts about your footwear, feel free to check with us. See the **Boot Selection Guide** below for more advice and tips when shopping for boots.



we

Boots & 3 - 4 Pairs of Wool Socks

Camp Shoes (Crocs or Old Running Shoes)

Shin or Knee-High Gaiters

Equipment	Rent	Buy	Notes
Wool socks (3-4 pairs)	X	\$13 -30	Must be synthetic or wool or a blend of both (no cotton/wool blends). Bringing a combination of mid to heavyweight wool socks is recommended for hiking and sleeping.
Hiking Boots	X	\$170-250	Sturdy, expedition backpacking footwear with adequate support for extended wilderness courses. See information at the end of the equipment list for more ideas about hiking footwear. Instead, some students shoes a lower profile hiking shoe, see optional items.
Camp shoes	X	X	Running, tennis, or cross-training shoes, in good condition, to wear around camp. Avoid expensive shoes.

Optional Items

Gaiters	\$5	\$50	Nylon boot attachment that protects the ankle from snow and dirt. Must be durable and large enough to fit over boots. Lightweight trail-running gaiters are not recommended. May/June courses will likely need gaiters. Courses in July may also need them.
Liner socks (2-3 pairs)	X	\$6-8	Lightweight wool or synthetic “wicking” socks. You will need at least two pairs if you are using a liner sock/wool sock combination in your hiking boots.

Toiletries

Self-care in the outdoors is an essential component of any expedition. Whatever systems you use to take care of yourself in your daily life can often be modified to the appropriate size/quantity for your course. Any starred (*) item is something that we sell at NOLS. Travel-size containers can be helpful in this process.

Equipment	Rent	Buy	Notes
Lip balm	X	\$3-5	Stick, cream, or tube-type moisturizing balm, SPF 15 or greater. Products with zinc provide superior protection.
Sunscreen	X	\$5-10	At least 3-6 oz., SPF 30 or greater. Products with zinc provide superior protection.
Dental Care	X	\$3-6	Whatever your oral hygiene system is (toothpaste*, toothbrush*, floss*, retainer, etc.), you can likely adapt it to your course using trial or travel size versions.
Skin Care	X	\$7	You may want to consider lotion* (preferably unscented) or Vaseline in 3-5 oz travel-sized bottles, wash cloth-sized pack towel for backcountry bathing, and ointment for scrapes if you are prone to scarring.
Hair Care	X	X	You may want to consider a comb* or brush*, bands*, chopsticks, headwrap, ties, or whatever your system is.
Menstrual products	X	\$5-35	Required if you menstruate. Bring the products that work well for you and slightly more supplies than you think you need. This might mean tampons*, pads*, a menstrual cup*, or some combo thereof.
Personal Medications	X	X	Any prescriptions/supplements that are part of your system should be brought in sufficient quantities.

Miscellaneous

Equipment	Rent	Buy	Notes
Bowl	X	\$7	A plastic bowl with a screw- or snap-on lid is handy.
Spoon	X	\$1-\$10	Lexan spoons are light and durable. We also sell plastic and titanium sporks

Water bottle (1-2)	X	\$14-16	Wide-mouth, hard sided Nalgenes work well. We recommend that everyone have 2 liters of capacity.
Bandana (1-2)	X	\$2	Useful for a variety of purposes from wiping post-pee to sneezing, from a cooling neck tie to wiping your bowl.
Headlamp	X	\$30	Durable and lightweight. Bring spare batteries.
Batteries	X	\$1	AA/AAA are available for sale. We recommend 2 full sets for your headlamp.
Lighter	NOLS Provides	\$1.50	For lighting your camp stove
Watch	X	\$25	A watch with an alarm is a nice feature.
Pen/pencil	X	\$0.75	For journaling and taking notes during classes
Notepad	X	\$10	A small, lightweight pad is fine.
Sunglasses	X	\$30-80	Sunglasses with 100-percent UV protection; lenses should be dark. If you wear prescription lenses and have limited vision without them, bring your own prescription sunglasses, clip-ons, or over glasses. We sell Suncloud and Optic Nerve.
Prescription glasses/contacts (2-3)	X	X	Bring a spare pair of glasses or lenses. Contact-lens wearers should also bring a pair of glasses as backup.
Optional Items			
Insect repellent	X	\$5-8	Small bottles; no aerosol spray cans. Optional
Book or e-reader	X	\$140	A lightweight paperback book or e-reader. Tablet-style e-readers (e.g. Kindle Fire) are not acceptable. We recommend bringing a padded case as well.
Trekking poles	\$5	X	Sturdy, telescoping poles that can be used for increased stability while walking and minimize impact on your legs. Rental price is for an individual pole.
Camera	X	X	The experience you're about to embark on is unique and powerful. — something you may want to capture memories of to take back with you. For this reason, we recommend bringing a lightweight, waterproof camera. Please consider this camera should have a battery/batteries that can withstand varied weather conditions.
Camp chair	X	\$35	Bonus for camp life, we sell Crazy Creek chairs.
Hydration system	X	X	An alternative hydration system to bottles, whether a Camelbak, Platypus, etc.

Sunglasses retainer	X	\$8	Chums or Croakies for keeping track of your glasses or sunglasses.
Pocket knife	X	\$25-35	One small knife is sufficient; simple folding knives are popular.

Shared Group Equipment—NOLS will supply

All items listed below are provided by NOLS and shared among all expedition members. Group equipment is included as part of the course tuition; however, students will be charged for any lost or damaged group equipment.

Tents
Compasses
Trowels
Stoves, fuel bottles and fuel
Maps
GPS
Repair kits
Reference books
Cooking gear/spice kits
Soap and hand sanitizer
Water purification

First Aid:

Our instructors carry adequate first aid kits. There is no need to bring your own.

Boot Selection Guide

We want you to have footwear that provides adequate protection for your feet, that is durable enough to withstand weeks of rugged wear and that provides reasonable comfort. Many boots and shoes available on the market meet these criteria.

Backpacking footwear is sturdy and durable, but there is a large range within this market. Be aware of the differences between the terms “boots” versus “shoes,” as well as “hiking,” “backpacking,” and “mountaineering.” “Shoes” and “hiking” tend to refer to more lightweight footwear, while “boots” and “backpacking” are more rugged. Either can be appropriate for you depending on your backpacking experience, ankle strength, and pack weight (goal is 40-50lb pack weight).

When considering footwear, remember that your course will travel mostly off-trail, and your feet will get wet. You could be in the snow as well. You will cross rivers and boulder fields. If you have little or no backpacking experience in this type of terrain and would like extra ankle support, we recommend a more supportive “backpacking” boot. Examples: [Asolo TPS Series](#), Garmont Rambler, Lowa Renegade Series.

If you are comfortable with your experience hiking with a heavy pack and footwear with less ankle support, it may be appropriate to use a midweight hiking or approach shoe. Examples: Keen Targhee Mid, Salomon X Ultra Mid, [LaSportiva TX4](#).

Avoid footwear associated with the labels “mountaineering” (example: La Sportiva Trango), which is too rugged, and “running shoes”, which may not provide enough support.

With all of the footwear choices on the market, we highly recommend you visit your local sporting goods or footwear shop, use the following guidelines, and try on a selection of shoes or boots. Comfort is the most important feature. Remember to give yourself several weeks to properly wear your footwear before arriving in Wyoming.