

Course Description

Pacific Northwest Outdoor Educator: Mountaineering

Features Of This Course

- Introduction to Pacific Northwest mountaineering
- On and off-trail travel both above and below timberline
- 9-day rock climbing base camp
- Emphasis on outdoor teaching techniques and philosophy
- Average group size: 10 students / 2 instructors
- Field days: 29

The Expedition

Washington's North Cascades are the location for this course with spectacular ranges of ice and rock. More glaciers are found here than anywhere else in the lower 48 and this will be the setting for much of your course. On this 31-day backpacking and mountaineering expedition, you'll receive an introduction to NOLS teaching philosophy and techniques. You'll cover a wide range of skills, highlighting teaching techniques for each skill. Split between two sections—wilderness mountain-travel skills and rock climbing—you'll receive a comprehensive program in minimum impact camping, mountain travel, basic mountaineering, and outdoor leadership.

You'll spend the first few days of your course in lush, old growth forests, working up to the jagged, snow-clad peaks of the North Cascades. You'll work hard traveling over steep, rocky terrain with all your gear on you back, but the scenery will be reward enough. You will also learn the skills you need to teach others how to live comfortably out-of-doors long after the end of your course.

These skills begin with the basics—camping, cooking, map reading, stove use, Leave No Trace techniques, and sanitation—skills that are the foundation for backcountry travel. You will be encouraged to present classes on subjects related to the course. The emphasis here is on rounding out skills through daily practice and experience and refining outdoor teaching techniques.

On snowfields and glaciers you will practice ice axe self-arrest, placement of snow anchors, and coordinated rope-team travel. You may also have the opportunity to put these skills together to attempt a peak climb. Reaching a glacier-clad mountain takes time on any expedition. Expect to spend time in vehicle shuttles, hiking in, and finally walking out from this section. There will be classes in geology, glaciology, environmental injuries, emergency procedures, and wild land ethics.

Climbing skills involving knots, rope handling, belaying, anchors, rappelling, and top roping will be emphasized at a separate 9-day base camp. Early season we will travel to Icicle Creek in Leavenworth, WA and later summer courses will climb in Squamish, British Columbia. This is the opportunity to gain a moderate understanding of risk management considerations in managing climbing activities. You will practice movement on rock and will be encouraged to climb as much as possible to improve their skills. You may move into advanced topics such as multi-pitch climbing, lead climbing, and basic cliff rescue. In order to maximize access to quality rock, this section will be in a front country setting based out of a campground near one or two popular local climbing areas. Climbing on a variety of rock types, each with its own considerations for climbing style and protection placement, broadens one's experience and judgment.

In addition to technical skills, students gain a broad, practical knowledge of natural history and environmental issues. Being able to identify wildflowers and trees, recognize animal tracks and bird songs, and interpret other aspects of an ecosystem are also important to the outdoor educator.

Each course includes time with managers of the various NOLS departments to familiarize you with the background procedures of running the school. The organizational aspects of outdoor programming will also be discussed, including expedition planning, equipment selection, student evaluations, liability assessment, and land use permits.



During your course you will live with three or four other students in a “cook group.” These small groups help disperse the impact on the land and enable you to master the art of backcountry cooking and living. You will also travel in small groups, usually of four to six, again to disperse impact and to enhance learning. Initially, these groups will include an instructor, but later in your course—once you learn the intricacies of map reading, route finding and hazard evaluation— student groups will often travel without instructors.

Weather and Other Challenges

Mountain weather is fickle. On any given day, temperatures may range from below freezing to T-shirt conditions. Courses may experience snow, rain, or long stretches of sun and blue skies. Whether the Pacific Ocean is experiencing an El Nino or El Nina condition can be cause for large swings in weather patterns in the Pacific Northwest.

Mountaineering in the Pacific Northwest, while it can be tough, remains a great learning ground for future mountaineering of all types. Often you’ll be off-trail bushwhacking through thick forests or scrambling around refrigerator-sized boulders. Early summer season courses may spend much of their time camping and traveling on snow. You will traverse steep slopes of snow, loose rock or grass, and struggle up high-mountain passes. You’ll be miles from the amenities of civilization. Telephones, ambulances, and hospitals may be several days away.

Identifying and managing mountain hazards—falling rock, weather, animals, moving water and steep terrain—will be a constant theme in our instruction. Camping may involve dealing with swarms of mosquitoes or hanging your food to keep it away from bears or other animals. Managing risks and assuming responsibility for yourself and your colleagues will help make your expedition in these wild and beautiful mountains healthy and fun.

Base camping for the final section of rock climbing can have its own unique challenges, in shifting from a backcountry setting to a front country climbing area.

Behavior on the Expedition

Each person’s values, beliefs and actions affect those of the rest of the group -- balancing these is an important part of expedition behavior. We want you to have a positive and safe learning environment. Therefore we expect all students to respect the values and beliefs of other members of the expedition. The best expedition members have positive attitudes, apply new skills and ideas at the first opportunity and come motivated to work hard with people they have just met. They care about others, place the welfare of the group equal to their own, and understand that an expedition succeeds when all its members complete each day successfully. To help ensure a healthy environment for all, we ask that people do not use tobacco products. Further, NOLS will not tolerate harassment or the use of drugs and alcohol on any course. If you feel your values or beliefs are not being respected, by NOLS’ staff or students, it is essential that you speak up so the issues are addressed.

Student Independence

On all NOLS courses students will be independent (unaccompanied by instructors) at various times. This will include time in and around camp such as while cooking or performing camp chores. Instructors may allow students to travel away from camp. Students often have independent unsupervised time, usually in town, before and after their course.

Independent Student Group Travel

An emphasis of this course is the development of the skills that permit you to be self-sufficient in remote backcountry areas. Our teaching progression for accomplishing this is carefully planned and executed. Initially travel groups, usually of four to six students, will include an instructor who will teach travel skills and leadership. Gradually, as you gain proficiency, the instructor will allow you to take on more responsibility and make more of the decisions. When you have demonstrated the necessary competency to the instructors, you may travel in student-led groups without instructors for a day at a time as you hike from camp to camp. We call this daily independent student travel and it is an effective educational tool. It allows you to practice travel skills and leadership and gives you responsibility for the outcome while still having indirect supervision by instructors and the benefit of the NOLS support systems.

Personal Electronics

A key element to a NOLS education is time spent in wilderness. The benefits of this include being closer to nature, time away from society and civilization, and being in an environment where natural forces predominate and students have the opportunity to develop good judgment and practice self-reliance. NOLS does not permit students to use personal cell or satellite phones or other communication devices including personal tracking devices (e.g. SPOT), while in the field.



Additionally, students are not permitted to take personal music players (iPods, MP3 players, CD players, etc). Instructors will be carrying sufficient communication equipment (usually a satellite phone) to handle any emergencies that may arise.

Fitness Recommendations

You will have long, busy days on your expedition; your fitness goals should focus on your ability to sustain a moderate level of exertion for hours on end rather than “quick sprints.”

Focus on a well-rounded routine that emphasizes stamina, endurance, flexibility and strength. Finally, don't ignore the need for balance; this will serve you well in moraine and boulder fields where the ability to quickly find your center of gravity as you move from one step to the next will enable you to dance, rather than stumble your way through. Play with it. Good luck, and have fun!

General Guidelines

Dr. Phil Watts, exercise physiologist at Northern Michigan University, has conducted research in conjunction with NOLS mountaineering courses in the North Cascades. The results of this study, and consideration of established principles of physical conditioning, have enabled development of the following general guidelines, which should be helpful in evaluating and improving your physical condition.

Aerobic (or endurance) capacity is a major factor in mountain travel and most course activities. An individual should have an aerobic capacity that would enable him/her to **run 1.5 miles in 11 minutes or less** to be well conditioned for extended mountaineering at moderate altitudes. Another useful assessment guideline is that an individual should be able to **run 5-6 miles in 40-55 minutes** or less, three times a week.

If you recognize a need for additional aerobic conditioning, begin at least 8-10 weeks prior to the start of the expedition and adhere to the following **F.I.T.T.** principle:

- **Frequency** - Exercise 3-5 times per week.
- **Intensity** - Exercise at about 60-80% of maximum effort. Use the “talk test;” if you are breathing so hard that you can't converse with a partner, you're working too hard - slow down a little.
- **Time** - Exercise sessions should involve an expenditure of about 300-600 calories per session. That's approximately the equivalent of: 3-6 miles of jogging; 10-25 miles of bicycling over rolling terrain; or 20-60 minutes of other aerobic activities such as cross-country skiing, swimming, etc.
- **Type** - The activity selected should be “total-body” - involving the large muscle groups - and should be rhythmical and continuous; it should not be conducted in spurts like sprints and many team sports.

Most efficient gains will result from using training activities that are “specific” - that is, like the activity for which you are training. Since hiking is primarily a lower body activity, running and cycling are perhaps of more benefit than swimming, for example. Progress gradually to avoid over-stress and injuries. Work on Time (duration) first, and then begin to increase Intensity.

Flexibility (range of motion) exercise is also important and should involve stretching for all muscle groups. Select a number of stretches for all areas of the body. Stretch “easy” - don't bounce or over stretch. Maintain each stretch for 10-20 seconds and don't hold your breath or strain. You should feel tension not pain. Stretching should be done before and after each exercise session.

Developing adequate upper body muscular fitness for your expedition can be relatively simple. Select a number of basic exercises for the upper body and abdominal areas such as push-ups, pull-ups, rope climbing, sit-ups, etc. Perform as many repetitions of each exercise as you can, resting between each exercise, then repeat. Do this basic workout three times per week or on alternate days. If you prefer working out with weights, follow the directions for the equipment you will be using or consult a reputable physical fitness text. Use strength training to supplement your aerobic program, not as a substitute for it.

While everyone has a certain amount of energy stored in the body as fat, excess fat will increase the work intensity of all activities promoting early fatigue. Assessment of relative body fat usually requires one of several laboratory procedures and



may not be available to many individuals. If you think you are significantly overweight, consult your physician about this well in advance of your course. Crash dieting would be a poor method of losing weight before your course. A good program of aerobic exercise, as described above, and improved nutritional habits will usually suffice.

Course Objectives

Each course is unique due to variables such as route, group dynamics, fitness levels and environmental conditions. Working within this context, it is our intent to accomplish the following objectives in five areas:

Risk Management and Judgment

NOLS prepares graduates to teach and practice responsible habits that promote the health and well being of self and others. Each student is expected to:

- Consistently demonstrate awareness of personal limits on steep terrain (rock, snow, ice, and vegetated slopes)
- Demonstrate knowledge of the mountaineering hazards encountered by the expedition including falling rock and ice, crevassed glaciers, avalanches, river-crossings, moraines and boulder fields
- Consistently perform specific techniques taught on the course to reduce or avoid hazards
- Describe an emergency plan for a group in the outdoors
- Demonstrate ability to perform basic emergency procedures to support a patient until help arrives
- Use experience and developing judgment to implement sound decisions and follows them through to completion

Leadership and Teamwork

Students are exposed to the theory and practice of outdoor leadership, teamwork and expedition behavior. At NOLS, expedition behavior involves commitment to the group, acceptance of others, and cooperation to achieve goals. Each student is expected to:

- Work effectively as a member of a team, displaying a positive attitude despite hardship
- Effectively communicate ideas and concerns on an individual and group level
- Accurately identify strengths and areas for growth in developing outdoor leadership in self and others
- Take initiative in teaching and leadership roles with peers
- Display awareness of group strengths and limitations
- Demonstrate effective problem-solving skills
- Provide effective oral and written feedback

Outdoor Skills

Students are expected to live, travel and educate others in the outdoors within a framework of personal well-being and care of the environment. Each student is expected to:

- Consistently minimize impact upon the environment while camping and traveling
- Live comfortably in a mountain environment: learn to camp, cook, and dress for a variety of conditions
- Travel competently in steep, mountainous terrain using off-trail navigation, hazard evaluation, glacier travel and river-crossing techniques
- Demonstrate the ability to competently belay, rappel, and set up simple anchors
- Demonstrate understanding of the principles of site selection and management for rappelling and top roping
- Accurately assess skills, strengths and endurance in self and others and conservatively apply those limits to given situations

Environmental Ethics

An integral part of every NOLS course is to raise students' awareness of their impact on the natural world. Each student is expected to:

- Use basic natural history observational and interpretive skills to demonstrate an understanding of and respect for the course environment
- Discuss the history, facts, and potential solutions relevant to pertinent environmental issues
- Demonstrate basic knowledge of and respect for local cultures
- Reflect on the transference of wilderness ethics and practices into daily personal and professional life



Wilderness Education Skills

This course helps students to develop as wilderness educators and leaders. Each student is expected to:

- Consistently model basic outdoor living skills
- Understand how environmental factors influence learning situations
- Demonstrate self-direction in the pursuit of learning opportunities
- Teach a class or make presentation to the group
- Reflect on personal teaching style and philosophy through critique and discussion

