

**American Alpine Institute**  
**Alpine Mountaineering and Technical Leadership**

**Part 4**  
**Ski Mountaineering and Remote Alpine Ski Tour**

**Curriculum**

**Backcountry Ski and Ski Mountaineering Skills:**

- selection & use of personal equipment for advanced ski mountaineering
- an introduction to snowpack formation, metamorphosis, and stability assessment
- cross country and downhill skiing skills; methods of ascent and descent
- adjustment in technique for challenging snow conditions
- route selection and hazard assessment
- roped skiing and travel skills
- constructing snow anchors with ski equipment and operating belays
- basic skills for the use of ski crampons
- Leave No Trace travel, climbing and camping skills
- design concept and selection of equipment
- use of electronic transceivers; avalanche rescue procedures

**Expeditionary Skills:**

- planning and preparing for a large scale backcountry expedition on skis
- continued training on the use of maps, compasses, GPS, and guidebooks
- strategizing for multi-day backcountry tours in a remote setting

**Mountaineering Skills:**

- review of glacial and ice structures
- continued development of mountain sense and the ability to follow a “line of weakness “
- development of advanced technical protective systems in an alpine setting
- advanced study of movement over complex alpine terrain

**Objective Hazards Evaluation & Self-Rescue Skills:**

- evaluation & prediction of mountain weather patterns
- introduction to the assessment of natural hazards
- individual & team crevasse rescue techniques
- avalanche awareness and rescue procedures

**Leadership Skills:**

- continued study and practice of individual technical leadership skills
- development of technical ski leadership strategies on complex terrain
- technical & personal functions of individuals on an ascent: roles & responsibility
- problem solving: gathering appropriate data & assessment techniques
- evolving leadership roles: individual leadership vs. collective decision making
- large and small team expeditionary leadership strategy

## Itinerary

The following is an example itinerary. This is subject to change due to weather, fitness, technical skill, road closures, wildfires or a variety of other circumstances. All course material will be covered, it simply may not be covered in this order.

It is likely that participants will go out to dinner one to three times throughout the duration of the course.

### **Day 1:**

Meet in Bellingham at 7:00am at the American Alpine Institute office. Once we have completed a thorough gear check, we will drive up to the Heather Meadow Lodge at the Mt. Baker ski area. Students will study and practice the use of avalanche beacons, shovels and probes. They will be introduced to basic backcountry ski equipment such as skins, bindings, ski crampons, etc. In the afternoon of the first day, we will begin to work on the larger concepts of the course such as terrain selection and evaluation, track setting, route finding, the proper use of ski touring equipment and backcountry safety. Hotel or Lodge.

### **Day 2:**

On the morning of day 2 we will begin the day with some lessons in camp or at a nearby coffee shop. The instructors will introduce navigational equipment and will cover the skills required to create a tour plan. Once that is complete, we will drive back up to the outskirts of the ski resort and head into the backcountry. Once in the field we will cover more terrain and have the opportunity for downhill track setting and the study of efficient group movement. We will introduce navigational skills and continue to review and fine-tune all of the skills up to this point. Hotel or Lodge.

### **Day 3:**

On the third day of the program we head into the north side of Mt. Baker and set-up camp at 5,000 feet near the lower Coleman Glacier. We will practice track setting with bigger loads and we will begin to look at the concept of "going light" on skis with minimal bivy gear. Once camp is set-up we will review emergency beacon searches, with an emphasis on multiple burial scenarios. Backcountry camp.

### **Day 4:**

Climbing in ski boots and crampons is a tricky and difficult proposition. Part of proficient movement in the mountains with skis is the ability to combine the skills from AMTL 1 and 2 with your new ski skills. On day four, we will study movement on technical ice terrain wearing ski boots and crampons. We will look at how to build snow and ice anchors with ski equipment and we will study how to transition from skiing into rappelling or climbing. Late in the day, we will do another short ski tour. Backcountry camp.

### **Day 5:**

On the fifth day of the trip, we will apply glacier travel and crevasse rescue skills to ski mountaineering. This will include self-arrest techniques for skiers, one-on-one crevasse rescue with skis on, and multi-team crevasse rescue. Once each member of the team has a complete understanding of his or her systems, the team will go on another short glacier ski tour. That evening we prepare for the ascent the following day. Backcountry camp.

**Day 6:**

On the sixth day of the program we will attempt to ski Mount Baker from the top. After we have skied the mountain we will descend to the car and spend the night at a car camping campground. Hotel or Lodge.

**Day 7:**

This day is reserved primarily for planning, logistics and travel. The team will spend the morning of this day planning a multi-day backcountry tour. Possible mini-expedition tours include the Ptarmigan Traverse, a ski descent of Glacier Peak, or even a series of ski descents of different mountains in the Cascades. The guides will help you to develop a plan that is compatible with the team's overall ski skills. You will visit a grocery store on this day to resupply and you will travel to a campground near the start of the tour. Hotel or Lodge.

**Day 8-12:**

These days are reserved for one major backcountry ski tour or a series of smaller tours. The guides will help you develop a plan that is compatible with the team's skills.