

Intermediate Glacier Travel Handbook

Introduction

Welcome to the 2019 Intermediate Glacier Travel module! This course teaches both the technical and non-technical skills needed to comfortably plan and lead a basic glacier climb. Through evening sessions at the program center and days in the field, you will practice good climbing technique, perfect self and team arrests, learn to place protection in snow and ice, manage moderately-steep snow slopes (up 55 deg), build and equalize anchors, construct advanced haul systems for crevasse rescue, set up group camps, and more! Lectures will also cover basic expedition planning, including route selection, in-the-field terrain evaluation, a navigation refresher, and how to write a practical trip plan.

The requirements to successfully complete this course are:

- Obtain an AIARE Level 1 certification *prior* to attending the field days
- Attend all five sessions of the course, including three evening lectures and two field days
- Successfully pass the prerequisite exam during the first evening lecture (more info below)
- Demonstrate competency in the new skills and techniques taught during the course
- Have a good time!

Course Format

This course is composed of three evening lectures at the Seattle Program Center and two days in the field. Attendance at all five sessions is required and all students are expected to have completed an AIARE Level 1 course prior to attending the field days.

Lectures

There will be three evening lectures at the Program Center, including a prerequisite skill evaluation, an interactive trip planning discussion, and a technical skills session introducing a variety of new techniques that will be used during the field trips. Each of these lectures are offered on multiple dates; you only need to enroll on one date for each lecture. Unless otherwise specified, these will take place between 6pm and 9pm on the day indicated.

Session	Topic	Dates Offered (Pick One of Each)
Lecture 1	Introduction and Prerequisite Evaluation	January 15, January 18
Lecture 2	Trip Planning	January 22, January 23
Lecture 3	Technical Skills Practice	January 30, February 1, February 5, February 12

Field Days

Attendance of two field days is also required to pass this module. A number of field trips will be scheduled in the coming weeks, led by different volunteers. If you taking this course as part of the Intermediate Climbing package, you are expected to attend the field trip scheduled by your group mentor. If you are taking this module as a

standalone course, you can sign up for any of the available programs. Depending on the field trip leader, the field days may be led either as a single, overnight trip, or as two separate days. Check the course page for the current field trip offerings and expect more to show up soon.

Prerequisite Evaluation

Students taking this module come from a variety of backgrounds: some are Basic graduates beginning their first year of Intermediate, some are second- or third-year Intermediates finishing up their graduation requirements, and others might be taking this as a standalone course after completing Basic Glacier. Because of this diversity, it's important to ensure that everybody coming in understands the prerequisite skills and to establish a common foundation to build new skills upon.

The first lecture of this module is an evaluation of these prerequisite skills. This shouldn't be seen as a high-stress exam; there shouldn't be any unfamiliar skills tested if you've met the prerequisites for this course. Consider this evaluation as an opportunity to dust the cobwebs off of the basics.

To help prepare, below is a list of the skills you will be tested on, along with some notes on how these skills will be evaluated by the instructors. If you have questions, feel free to reach out directly to me (Nick Hunt, huntnb@gmail.com) or to any of the other module staff.

There will be three stations that everyone must complete during the evaluation:

- **Basic knots, hitches, and bends.** Most of the technical skills we cover in this course require familiarity with basic knots, hitches and bends. You will be expected to know how to tie the following: overhand on a bight, figure-eight on a bight, rewoven figure-eight, bowline, alpine butterfly, clove hitch, Munter hitch, Munter-mule, Prusik, autoblock, and Klemheist.

To pass: Know how to tie these knots well and how to dress them properly. You should not need prompting by the evaluator or other students. A few good resources to review these materials is the "Basic Knots" section in Chapter 9 of Freedom of the Hills (9th edition), or Grog's Animated Knots (<http://bit.ly/2jc0tQj>).

To fail: Show up without knowing how to tie the required knots, or require frequent guidance from others. Consistently leave your knots undressed or sloppy. "*A knot not neat is a knot not needed!*"

- **Crevasse self-extrication.** You will need to demonstrate safely ascending a fixed line using standard glacier climbing equipment (i.e., carabiners and cordelettes, not mechanical ascenders). One example of appropriate rigging and technique is the Texas Prusik system described in the "Rescue Methods" section in Chapter 18 of Freedom of the Hills.

To pass: Know how to rig the ascension safely, maintaining two points of contact with the climbing rope at all times (e.g., the primary waist prusik and a back-up knot no more than 2m below the prusik). Keep excess slack in the system to strictly less than 2m (6ft) with a clove hitch or other knot.

To fail: Improperly put on your harness or forget your helmet. Have only one point of contact with the rope

or have excessive slack in the system.

- **Basic crevasse-rescue.** Although more complex crevasse-rescue haul systems will be covered in this course, we expect all students coming in to be familiar with a basic 2:1 drop-C system. See the section “2:1 (Single) Pulley System” of Chapter 18 of Freedom of the Hills for an example.

To pass: Execute a crevasse-rescue with a 3-person rope team according to the procedures outlined in Freedom of the Hills. The recommended haul system is a drop-C 2:1. All climbers should remain securely attached at all times (to the anchor or to the rope) and excess slack kept to a minimum.

To fail: Expose your fallen climber to undue risk at any time (e.g., by omitting a backup or by having excessive slack in the system); or expose yourself to undue risk at any time (e.g., by approaching the crevasse edge without adequate protection or by not securing yourself with a tether while at the anchor).

If time does not allow everybody to finish the evaluation during the first lecture, there will be opportunities to make up the remaining components. These will be handled on an as-needed basis, so reach out to the course staff if this is required.

Equipment

The required equipment for this module is the same as for a Basic glacier climb (see the section Gear Matrix in the Basic Alpine Climbing Handbook), plus the additional items described below.

- **Avalanche transceiver.** A modern, digital transceiver is required; analog transceivers tend to be more trouble than they're worth these days. Common choices include the BCA Tracker2 (<http://bit.ly/2RHacwr>) or the Pieps DSP series (<http://bit.ly/2Apu2ox>), although almost any other digital transceiver will work just as well.
- **Probe.** Probes are essential for safety in avalanche terrain. I like the Black Diamond QuickDraw Tour 280 (<http://bit.ly/2Aqv9Vm>)
- **Snow shovel.** A compact, durable snow shovel is required for avalanche safety, anchor construction, edge-prep during crevasse rescue, and camp-site construction. Full metal blades are ideal, such as the compact shovels offered by Brooks Range Mountaineering (<http://bit.ly/2ArGGDL>) or the Black Diamond Deploy (<http://bit.ly/2iF7qfJ>). Plastic shovels are completely insufficient.
- **Guide-style belay device.** Guide-style belay devices are extremely valuable for crevasse rescue scenarios and group safety on steep slopes. If you don't already have one, good choices are the Black Diamond ATC-Guide (<http://bit.ly/2iFsYJ2>) or the Petzl Reverso (<http://bit.ly/2iDU9nA>). Although slightly heavier, I've found the ATC-Guide to perform a little better with wet or icy ropes.
- **Snow picket.** Snow pickets are essential tools for building snow anchors. All students should have at least one snow picket. If you're in the market for a new one, I highly recommend the pre-rigged, swage-cable Yates pickets (<http://bit.ly/2ACMLzM>).

See you soon!

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