

Avalanche Level I Courses 2017

Logistics and Course Information

Sponsors: Prescott College and Kachina Peaks Avalanche Center (KPAC)
KPAC Education Coordinator: David Lovejoy david.lovejoy@kachinapeaks.org

Course Description: The American Avalanche Association's Level I curriculum is intended to be a 24 hour course designed to give participants a thorough, practical introduction to avalanches as phenomena, and the skills to recognize the key conditions responsible for their occurrence. Additionally, participants will learn strategies for prudent decision-making and techniques for travel in avalanche terrain that will increase the odds of avoidance and survival. Since avalanches are complex in nature and cannot be definitively predicted, the importance of, and skills enabling efficient avalanche companion rescue will also be emphasized.

Learning Objectives

The successful student will:

- Understand the different types of avalanches and the conditions that produce each.
- Be able to identify the parts of a slab avalanche.
- Become familiar with weather factors that contribute to avalanche probability.
- Know the topography of landscapes capable of producing avalanches.
- Have a foundational knowledge of how changes within the season snowpack affects strengthening and weakening of bonds between grains and crystals.
- Be able to identify factors contributing to snow slab formation, and to identify slabs in the field.
- Become familiar with recognized pit-falls in human decision making that have contributed to avalanche accidents in the past.
- Practice travel rituals used to reduce exposure to dangerous avalanche conditions and avoid multiple burials.
- Demonstrate effective and efficient use of avalanche transceivers and perform effective companion rescues using scenarios.
- Be capable of deciphering the meaning of snow pit profile graphs and danger roses.
- Know the importance of critical route selection in avoiding danger in avalanche terrain.

Topics Covered: Avalanche survival statistics, the avalanche triangle, terrain consideration, meteorological factors, snowpack structure and snow metamorphism, decision making and the human factor in avalanche accidents, stability observations, snow stability testing, reporting and recording pit and test results, travel protocols and ski testing, self-rescue, transceivers use in companion rescue, rule based decision-making models, emergency care for avalanche victims, rescue organization and evacuation options, opportunities for advanced training in the future—level II courses, web resources, further reading, etc.

Additional Course Information

Course Format: This level I avalanche certification course complies with curriculum standards approved by the American Avalanche Association (AAA). Prescott College will grant the certificate of successful completion. The course will be taught in a two and one half day and one evening format, including approximately one and a half days of field experience, 6 hours of classroom instruction, and 2 hours of practical testing of comprehension, rescue skills, and stability assessment. The instructor to student ratio of 1: 6 will be retained during field sessions. Experienced teaching assistants may assist with instruction and risk management. Subgroups of no more than 9 backcountry travelers will be established for safety and efficiency during field sessions.

Itinerary and meeting locations

Day 1: Friday afternoon and evening meet at one of two locations: Location 1. Fort Valley Lodge, Route 180 and Snowbowl Road, or Location 2: REI store in Flagstaff, 323 Windsor Ln., Flagstaff, AZ 86001. We will let you know ahead of time.

Classroom from 1-5pm, dinner break*, then classroom from 6-8 pm. This session may include some time outside so dress warmly, but skis and snowboards will not be necessary. Bring your transceiver, pencil or pen and thermos and food if you are brown bagging it!

Presentations on theoretical fundamentals: characteristics of avalanches, the avalanche triangle, weather factors, terrain factors, snowpack and the human factor.

Practical session: introduction to avalanche transceivers, range and function testing, companion rescue, self-rescue and rescue organization will be discussed.

*Note: There will be a one hour dinner break – either brown bag it or enjoy a quick meal at Ski Lift Lodge (across route 180 from Fort Valley Lodge) or anything near REI. Sometimes we order pizza delivery to save time.

Day 2: Field 8 am until dark. We will meet at Agassiz Lodge, Snowbowl Ski Resort, in the cafeteria/bar area where winter backcountry permits are issued. Bring all of your equipment to the field sessions, but leave your skis/snowboards on the deck outside. No skis or snowboard are allowed inside the lodge.

Topics: Tour planning and navigation, avalanche transceiver round-robin function testing, route finding in avalanche terrain, impromptu field observations and stability tests, tracking the season through snowpack analysis, stability testing, companion rescue scenario drills, ski testing, travel protocols, procedures and decision-making, reporting and recording.

We will tour out of the resort and climb up to the Dutchman Slide area depending on conditions. We will divide into subgroups to dig, analyze and conduct stability testing in snow pits and practice companion rescue techniques. The day will conclude with systematic descending procedures using safe travel protocols.

Day 3: Field practice and exam (8 am to 4 pm). We will meet at Agassiz Lodge, Snowbowl Ski Resort. Topics: Emergency procedures, rule based and statistical decision-making models, diagramming pit profiles, danger roses, rescue organization, emergency evacuation, student test pits and stability testing practicum and group rescue scenario. From 4pm-6pm: written exam and course debrief.

Special Notes: You will need a Winter Backcountry Permit from Coconino National Forest. These are free of charge and may be acquired ahead of time at Agassiz Lodge on Saturdays and Sundays between 9 and 11 am, or at the Flagstaff District Ranger Station on Highway 89, Monday through Friday from 9am - 4:30pm. If you haven't acquired this permit ahead of time you can get it on the Saturday morning of the course, but you need to bring your driver's license and vehicle license plate number. On our second field day we often use Snowbowl Resort's lift #1 to expedite access to high elevation backcountry terrain. On these occasions, Snowbowl Ski Resort has generously allowed single lift-rides without requiring participants to purchase a lift pass. You will need ski and board retaining straps to ride the lift.

Appropriate participant background

Ideally participants will have intermediate or above backcountry skiing, or snowboarding familiarity and skill, and experience with basic uphill and downhill travel techniques such as use of snow shoes, split-boards with skins (snowboarders), and climbing skins and free-heel bindings (AT and Tele skiers) and the ability to link turns in un-groomed snow. Having said this, our mission is to get the word out to as many Arizonans as possible, and we have had successful experiences with out of bounds skiers (alpine skiers) and mountaineers on snowshoes only. The challenge is teaching group travel protocols to a group on so many different tools and therefore differing rates of travel particularly downhill.

The other challenge has been a combination of general physical fitness and acclimatization to the elevations reached on San Francisco Peaks. The enclosed screening questionnaire is designed to aid us in assembling appropriate

subgroups for our field activities, particularly on the third day. We sincerely urge participants to accurately assess their own background so that everyone can have the most relevant experience on the course. Participants should be aware of the high altitude conditions on San Francisco Peaks. We travel at elevations of up to 11,800 feet. Being in good physical condition is particularly important for those coming from low elevation regions. We do our best to recognize and accommodate differences in ability and acclimatization when traveling in the field. Giving us an honest appraisal of your circumstance will aid us in this effort.

Pre-course Reading

We encourage students to become familiar with material covered by doing some reading ahead of time. The best sources of information are [Staying Alive in Avalanche Terrain](#) by Bruce Tremper, and Snow Sense by Jill Fredston and Doug Fessler, both available at Amazon.com. [Observational Guidelines for Snow, Weather and Avalanches in the United States](#) published by the American Avalanche Association will be available for purchase at the start of the course. This publication can help to prepare level one students for more advanced courses in the future. It is a book you will need to grow into.

Required Equipment

Skis and ski poles/snowboards/snowshoes OPTIONS: Skis: Alpine Touring (AT) or Telemark skis, either with skins. Alpine skis and boots with “Alpine Trekker” and skins are acceptable by instructor’s permission only. Snowboards: Either split-boards with skins, or snowboards with the additions of snowshoes, or approach skis and skins.

Snowshoe users: Participants using snowshoes for both up and downhill travel will be permitted to enroll as long as a group of at least two participants will be using these, so get your friend to join you and enroll in the same course, and make sure to identify yourself if you intend to participate with only snowshoes. This is for risk management and to allow a buddy system.

Boots – AT, Telemark, snowboard or mountaineering boots

Daypack – A large day-pack of at least 1800 cubic inches

Avalanche rescue shovel

Avalanche probe

Transceiver

Warm mittens or gloves

Wooly hat and neck gaiter or scarf

Storm gear and extra insulation clothing – standing in a snow pit can be cold.

Small piece of insulating foam to sit on is recommended but not required.

Water bottles or thermos, 2 quarts minimum.

Extra food, lunch and energy bars for eating on the move.

Repair items like a multi-tool, and a few emergency parts for your bindings.

Topographic map and compass with inclinometer, or slope gage is recommended but not required.

Crystal card and magnifying lens (if you have one bring it).

Small field notebook – “Rite-in-the-Rain”

Sunscreen and lip balm

Sunglasses and goggles

Lighter and knife and fire starter (like a candle)

Lightweight personal first aid kit (Band-Aids, moleskin, adhesive tape, aspirin or ibuprofen).

Headlamp and extra batteries.

Cell phone – it never hurts.

Avalanche transceivers, rescue shovels and probes can be rented from Prescott College. All three for \$30 for the three-day course, or probes \$10 (Black Diamond), rescue shovels \$10 (Voile) and transceivers (BCA Trackers) \$20. Rentals must be requested in advance.

Split boards, Alpine Touring and Telemark ski (including skins) are also available for rental, but not alpine touring, Telemark or snowboarding boots. Consult David Lovejoy in advance david.lovejoy@kachinapeaks.org