

AIARE Level 3: Advanced Avalanche Training for Professionals and Recreational Leaders

The Level 3 course is an advanced certification course for experienced and professional avalanche practitioners, professional guides, patrollers and advanced recreational backcountry travelers. The course is 6 days long and completes the avalanche course stream of the Level 2 and 3. (10 days together). Individuals who receive a passing grade and successfully complete the course receive a certificate provided by the AIARE administration.

The Level 3 course provides course participants with an industry based framework to make decisions in avalanche terrain and to manage avalanche hazards common to avalanche control operations and winter guiding scenarios. Participants are required to form opinions, to take on leadership roles, and to utilize team members skills to assist in the process of forecasting avalanche hazard and snow stability and making appropriate terrain choices. Course goals also include evaluating each participant to the AIARE Level 3 standard.

The Level 3 course builds on the concepts introduced in the prerequisite Level 2. These include standardizing snow and weather observations and techniques to the Snow, Weather, and Avalanche Guidelines of the American Avalanche Association (2004). The Level 3 takes the “trained observer and technician” and begins the process of making the information relevant to the complexities, variability, and influences of terrain.

If you have specific questions regarding the Level 3 programs; dates, locations, equipment, pre requisites, etc, get in touch with Ben Pritchett, Level 3 coordinator at; benp@avtraining.org

Student Learning Outcomes

- Develop a snow stability and avalanche hazard analysis and forecasting process.
- Be able to form opinions about snow stability, avalanche hazard, and operational decisions.
Each day begins with a forecast, spends time making decisions in the field, and ends with a hazard analysis. Each hazard evaluation decision is carefully briefed, coached, and debriefed.
- Improve participants’ observation and recording skills.
- Improve the participant’s terrain analysis skills
- Improve decision making in the field.
- Improve understanding of the creation and metamorphism of the mountain snowpack.
- Encourage active participation.
- Advance participant’s companion rescue skills.

Lectures and case studies highlight human factors as they influence the decision making process.

New research is included where relevant.

The Level 3 instructors are required to be current with the latest research and educational tools in use by snow avalanche practitioners and instructors. Each course is presented by a variety of experienced instructors including mountain and ski guides, and avalanche professionals whose background includes ski area or highways control procedures.

Instructional Sessions (approximately 68 hours of class or field instruction):

1. Pre course study and quiz
2. Avalanche Terrain.
 - Spatial variability and developing “excellent terrain skills”.
 - Lectures, Case histories, and field terrain discussions
3. Craftsmanship and professional standards
4. Review of study plot weather and snow profile techniques
 - Calculating densities
 - Drafting techniques
5. Review of snow crystals, sub-classifications
6. Operational stability and hazard forecasting
 - Twice daily meetings: am forecast; evening analysis
 - Operational forms and recording methods
 - Information exchange with nearest neighbor operations
 - Weather forecasting: actual data, upper level data, ridgetop data, weather maps and images, forecasts, storm cycle trends
 - Avalanche path photos and image use
 - Run list use in hazard forecasts
7. Avalanche safety equipment: burial prevention, reducing burial time, increasing survival time
8. Companion rescue:
 - Review of pinpointing on a line, multiple burials (3 circle search, micro strip search) techniques, shovel techniques
 - Teaching techniques for patrol and clientele.
9. Terrain travel and group management
 - Relate the Wx forecast to field weather observation
 - Gathering accurate info while moving through the terrain
 - “Off line” information: quick tests to confirm information known and to reveal variation.
 - Terrain discussions include: targeting known stability issues, anticipating, visualizing where will avalanches occur, where will the fracture occur, triggering, potential size, depth, width, and length.
 - Creating options in the terrain
 - Keeping field decisions consistent with office forecasts

- Human factors affecting team and team leader decisions
 - Hazard evaluation, control decisions and safety margins
10. Comparing field tests to study plot information. Including probing, hand tests, bonding tests, test profiles, RB, fracture line profiles, ski tests, etc.
 - Targeting weak layers
 - Stressing site selection/relevancy
 - More info over space to add to baseline data
 - Use of snow profile checklist (“Yellow Flags, Lemons”) to prioritize characteristics
 11. Case Study: Operational decision-making
 - Introduces a model of how decisions are made
 - Reviews terms which include judgment, decision making, common sense, heuristic traps
 - Illustrates human error and heuristic traps with a case study
 - Student groups identify and describe heuristic traps in the case study
 - Describes McCammon’s definitions of Heuristic Traps
 - Concludes with common operational procedures to mitigate human errors.
 12. Preparing for the examination process
 - Describe profile and field weather testing procedures
 - Describe terrain exam procedures
 - Describe written exam procedures
 13. Exam Day
 - Field terrain exam (includes control targets and exercise to illustrate variability)
 - Class terrain exam from photos
 - Weather observations exam
 - Snow profile exam
 - Written exam (includes storm profile analysis)
 - Issuing a public bulletin
 14. Course close
 - Reviews the goals stated by the students at the beginning of the week.
 - Links to continued professional development, skill development, participation in seminars, AAA membership etc.
 - Debriefs student’s strengths and weaknesses
 - Student feedback form

Level 3 Student Prerequisites

Level 3 is a course and exam that requires students to travel safely and efficiently in avalanche terrain. Field days will include travel on rugged terrain up to and exceeding 30 degrees, trail breaking, and 8 hours of travel carrying a day pack with rescue equipment and clothing.

Students must submit an application to the course provider which details they have met the prerequisites:

1. AIARE Level 2 course

2. Experience applying the Level 2 skills and knowledge in a professional or personal program is required.
3. Personal resume:
 - Twenty day-trips in avalanche terrain requiring decision-making and travel procedures
 - Twenty day trips with documented field weather and snowpack observations (to AAA SWAG or OGRES Observation Guidelines standards)
 - Ten recent snow profiles (documented in field book to same standards)
4. Rescue:
 - Must be able to find (by probe) two transceivers buried in a 30m by 30m area in six minutes. (One transceiver is buried 30cm below the surface; the second is buried 40-60 cm below the surface 3 to 4m apart.). Led a rescue team in a mock avalanche rescue scenario OR have training and experience in a professional search and rescue group (e.g. ski patrol, etc.)
5. Prior to the start of the Level 3 course, it is required that the student complete the Pre- Course Quiz which is handed in to the course leader at the start of the course.

Level 3 Assessment Criteria

Level 3 participants are eligible for certification after:

- Completing the pre-course reading and questionnaire.
- Attending the classroom sessions, completing the homework assignments to a professional level and participating in the group learning sessions.
- Attending the field sessions and participating in the group discussions and exercises.

Level 3 Participants are eligible for certification after attaining the minimum passing grade of 70% in the marking categories:

1. Avalanche hazard management skills 45%
 - Recognition 15%
 - Analysis 15%
 - Response 15%
2. Technical Skills and Knowledge 55%
 - Field weather observations and recording 5 %
 - Snowpack observations and tests 20 %
 - Operational forecast and analysis forms 10 %
 - Professional notebook 5 %
 - Final Written Exam 15%

Students who do not meet the AIARE Level 3 prerequisites may take a 1.5-day Level 3 Primer course to help prepare them for the exam. Participation in the primer course is by permission of the Level 3 Course Coordinator and/or AIARE Technical Director.

It is required that the Level 3 Course Coordinator confirm the resume with references or have the student forward a photocopy of a field notebook illustrating field observations.