



EN - CURRICULUM

Übungsleiterin/Übungsleiter  
**Skihochtouren**

Winter 2019

# INHALT

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## A) Educational objective

The course *Übungsleiter Skihochtouren* builds on the course *Übungsleiter Skitouren*. *Übungsleiter Skihochtouren* are experienced volunteer ski mountaineers who have the skills to guide groups responsibly on ski tours in high altitudes that they have chosen themselves. They are aware of the risks involved in high altitude mountaineering and able to help efficiently in case of emergency. *Übungsleiter Skihochtouren* are also able to communicate basic skills for agreeable ski mountaineering in high altitudes for beginners and intermediate skiers while being aware of the risks involved. The course *Übungsleiter Skihochtouren* primarily focuses on guiding and leadership skills.

Course volume: ca. **56 units** on 5 days.

## B) Requirements

- The basic prerequisite to participation in the course *Übungsleiter Skihochtouren* is having passed either *Übungsleiter Skitouren* or *Instruktor Skitouren*.**
- Experience in planning with high altitude ski tours and ski touring. Documentation of ski tours: "Name 6 high altitude ski tours (with glacier and rock travel) of at least 1000 meters in altitude difference which you have completed during the last two years (without a guide or other help). Please name your partner and give the date (mm-yy) in brackets."
- Skills: Climbing of boulder/talus fields (UIAA 2+) wearing ski mountaineering boots, climbing of firm faces up to 45° as well as sure-footedness and freedom from dizziness on pathless terrain.
- Rope handling: overhand loop, (rewoven) figure-of-eight knot, Munter hitch, girth hitch, clove hitch and Prusik knot
- Endurance and fitness: Ascents of 1000 meters in altitude difference in a maximum of 3 hours (total time) without signs of fatigue
- Minimum age: 16 years.

## C) 3 stages in the acquisition of competences

The letters (U), (A) and (T) indicate the extent to which the participants need to acquire the course content. The three stages - represented by the three letters - are defined as:

### **(U) „Understanding“:**

- Comprehending and grasping meaning
- Having knowledge about ...

Prerequisite for this stage is "knowing":

**knowing → understanding**

### **(A) „Applying“:**

- Interpreting facts, recalling relevant knowledge and transferring it to other situations
- Using acquired tools e. g. being able to work with decision-making strategies.

Prerequisite for this stage is “understanding”:

**understanding → applying**

**(T) „Teaching“:**

- Being able to communicate acquired knowledge according to its meaning
- Being able to teach competences during guided section tours and to instruct at training events.

Prerequisite for this stage is “understanding” and “applying”:

**understanding/applying → teaching**

The stage of competence to be reached (U, A or T) is indicated in the following pages. The method of teaching depends on the contents and will be one of the following: small groups, hands-on exercises, presentations, lectures and peer teaching/demonstration lessons.

## D) Teaching objectives & methods

### 1. ORIENTATION & NAVIGATION [6 units]

#### 1.1. Orienteering compass/Coordinate scale

Participants...

- ✓ knows how the orienteering compass works and how to use it (A)
- ✓ masters the 4 basic orienteering compass skills (A)
- ✓ can determine their position in the map using the orienteering compass. (A)
- ✓ can determine the compass direction of points in the map using the coordinate scale and pinpoint them in the terrain using the orienteering compass. (A)

##### Methods:

- [Indoors/group] Teach the 4 basic orienteering compass skills in groups
- [Outdoors/group] Various orientation tasks on the terrain

#### 1.2. GPS

Participants ...

- ✓ can enter coordinates of waypoints (A)
- ✓ can string waypoints together to generate a route (A)
- ✓ are able to determine the coordinates of their position in the terrain. (A)

##### Do not teach:

- X Special functions of the participants' GPS devices
- X Digital tour planning using specialised software

##### Methods:

- [Indoors/group] "Table of maps" – plan a tour using GPS points
- [Outdoors/group] Various tasks involving GPS devices on tour

#### 1.3. Smartphone

Participants...

- ✓ can use the app [alpenvereinaktiv.com](http://alpenvereinaktiv.com) for orientation and navigation (A)
- ✓ can download tours and map segments for offline use (A)
- ✓ know how to set their smartphones to energy saving mode. (A)

##### Method:

- [Indoors/group] Introduce app functions (menu) / Download map segments.

- [Outdoors/group] Use the app **alpenvereinaktiv.com** for determining the current position during tours.

## 2. ROPE HANDLING [15 units]

### 2.1. Roping up on a glacier

Participants ...

- ✓ know the various types of rope protection on glaciers (T)
- ✓ know how to space roped-up skiers apart and how to use stopper knots depending on the size of the rope team (T)
- ✓ know about the necessity of discipline during roped-up glacier travel (during breaks, slack rope, etc.). (T)

#### Methods:

- [Outdoors/group] Demonstrate and explain. Have participants follow the example. Practice roped-up ascent and roped-up down-hill skiing.

### 2.2. Protection in snow

Participants ...

- ✓ can place fixed belays in snow using skis or ice axes (one-ax deadman anchor, ski belay). (A)

#### Methods:

- [Outdoors/group] Demonstrate and explain. Have participants follow the example. Check and Discuss the participants' anchors together.

#### Do not teach:

- X Boot-ax belay ("New Zealand foot brake"), ice-axe belay ("stomper belay"), sitting hip belay with anchor
- X Detachable one-ax deadman anchor and detachable boot-ax belay

### 2.3. Protection on ice

Participants ...

- ✓ can place ice screws correctly. (A)

#### Methods:

- [Outdoors/groups] Demonstrate and explain on suitable terrain. Have participants follow the example. If needed repeat during tour.

#### Do not teach:

- X Belay station on ice using two or more anchors (Series)
- X Abalakov V-Thread

X Belayed leading on ice

## 2.4. Belaying from fixed anchors

Participants ...

- ✓ know how to belay from fixed anchors in steep ice (using an ice screw) rock (A)
- ✓ are in a position to set up a belay station using a horn of sound rock or a ring bolt (A)
- ✓ masters belaying using the Munter hitch and tying off the belay using the Munter Mule knot. (A)

### Methods:

- [Outdoors/groups] Demonstrate and explain. Have participants follow the example. Repeat on tour.

### Do not teach:

- X Using belay devices (Reverso)
- X Belay station in rock using removable anchors (friends, nuts)
- X Belay station using a series of anchors respectively bowline on a bight knot

## 2.5. Ascent and descent on a fixed line

Participants ...

- ✓ are able to set a fixed line tied into a reliable fixed anchor (ice screw, runner around a rock horn or bolt) (A)
- ✓ are able to instruct the group how to move along the line using a Prusik knot (T)
- ✓ are able to belay the last group member to the assembly point using the Munter hitch (A)

### Methods:

- [Outdoors/group] Help participants set a fixed line. Choice of terrain is crucial. Participants move up and down the line using the Prusik knot. If possible, repeat realistic scenario on tour.

### Do not teach:

- X Use of ascenders

### 3. RESCUE TECHNIQUE [15 units]

#### 3.1. Direct pull using brute force

Participants ...

- ✓ are able to lead a group hauling up the fallen skier. (T)

**Methods:**

- [Outdoors/group] Explain and show on suitable terrain. Have participants follow example in suitable group sizes. Discussion.

#### 3.2. Single pulley

Participants ...

- ✓ are able to haul a fallen skier out of a glacier crevasse using the single pulley. (A)

- ✓ are able to use the Microtraxion on single pulley rescues (A)

**Method:**

- [Outdoors/group] Demonstrate and explain the technique on suitable terrain with a secure backup anchor system. Participants practice in rope parties of two and/or three. If the terrain calls for it, the backup anchor system must be checked at close intervals ensuring its proper function (danger of melting due to exposure to direct sun light).

**Do not teach:**

- X Z-pulley

#### 3.3. Self-rescue after a crevasse fall

Participants ...

- ✓ know how to rescue themselves and is able to apply the two steps of this technique flawlessly (Prusiking, Münchhausen technique). (A)

- ✓ Are able to use the Microtraxion on self rescue techniques (A)

**Methods:**

- [Outdoors/group] Explain and Show on suitable terrain. Have participants follow example. Repeat.

#### 3.4. Bivouac

Participants ...

- ✓ are familiar with the possibilities of uses of bivouac sacks (A)

- ✓ are able to build a bivouac of the type "Panzerknacker" (German name of Disney's Beagle Boys) (A)

- ✓ know other types of bivouacs. (A)

**Methods:**

- [Outdoors/group] Discuss topic with group.

## 4. RISK AWARENESS [5 units]

### 4.1. Practical glaciology

Participants...

- ✓ are aware of the danger of crevasses on ski tours in high altitudes (U)
- ✓ know about the warming of permafrost and the subsequent increase of falling rocks in walls and faces (U)
- ✓ recognise typical crevasse zones and is able to avoid them systematically (A)
- ✓ know about the dangers of seracs (falling ice). (U)

#### Methods:

- [Indoors/group] Lecture „Risk on ski tours in high altitudes“ (ppt)
- [Outdoors/group] Participants analyse critical terrain and discuss required action with the trainer.

### 4.2. Altitude

Participants ...

- ✓ know the reactions and typical symptoms of the body in high altitudes (A)
- ✓ know how to prepare properly for high altitude ski mountaineering and how to take preventative measures against mountain sickness (go slow, drink plenty). (A)

#### Methods:

- [Indoors/group] Participants discussion and explain topic with trainer.

### 4.3. Weather

Participants ...

- ✓ are aware of the importance of stable weather conditions for ski tours in high altitudes (U)
- ✓ is able to get current weather information and to take appropriate action (go ahead with the tour, change the tour destination, cancel the tour) (A)
- ✓ is aware of the windchill factor and knows how to deal with it (U)
- ✓ is aware of the dangers of the sun and radiation. (U)

#### Methods:

- [Indoors/group] Lectures „Risk on ski tours in high altitudes“ and „Weather“ (ppt)
- [Outdoors/group] Observation of the weather development during the day (diurnal course). Changes to the tour are discussed and decisions are made together.

**Do not teach:**

- X Specific meteorological terms and intricate connections

**4.4. Visibility/Orientations & Navigation**

Participants ...

- ✓ are aware of the importance of good visibility during ski touring in high altitudes (U)
- ✓ are able to navigate using GPS and/or smartphone in adverse conditions. (A)

**Methods:**

- [Outdoors/group] Various GPS tasks in poor visibility and white out.

**Do not teach:**

- X Strip map

## 5. LEADING [8 units]

### 5.1. Group size

Participants ...

- ✓ know about the advantages of small and the disadvantages of large ski touring groups; they know the recommendation by the ÖAV for the maximum group size of ski touring groups for tours in high altitudes (5+1) (A)

#### Methods:

- [Outdoors/group] Demonstrate and explain. Participants take turns leading the group.

### 5.2. Skiing downhill

Participants ...

- ✓ are aware of the necessity to assemble the group uphill from their own position (A)
- ✓ is familiar with the most important downhill strategies (single skiing, skiing in a designated corridor, skiing in the leader's tracks) (A)

#### Methods:

- [Outdoors/group] Demonstrate and explain. Participants take turns leading the group.

### 5.3. Roped skiing

Participants ...

- ✓ are able to instruct a rope party in a manner that they can ski down-hill and securely without falling while being roped-up (A)

#### Methods:

- [Outdoors/group] Demonstrate and explain. Participants take turns leading the group.

### 5.4. Assembly points

Participants ...

- ✓ can identify suitable and safe assembly points in the terrain (A)
- ✓ are aware of the importance of the assembly points (fall, crevasses, avalanches) (U)

#### Methods:

- [Outdoors/groups] Demonstrate and explain. Participants take turns leading the group.

### 5.5. How to carry skis

Participants ...

- ✓ know the two options (A-Frame, diagonal) for fastening skis onto a backpack (A)
- ✓ are aware of the problems posed by fastening skis onto avalanche backpacks (U)

**Methods:**

- [Outdoors/group] Demonstrate and explain. On ascents, the group leader checks the fastened skis and suggests improvements if necessary.

**5.6. Crampon technique**

Participants...

- ✓ know the different types of crampons and can adjust and attach them (A)
- ✓ is familiar with the basic skills of cramping: flat-footing ("French technique") (T) and front-pointing ("German technique") and can instruct a beginners' group effectively

**Methods:**

- [Outdoors/group] Demonstrate and explain. Participants follow the example and practise. Practice demonstration lessons if time allows.

**Do not teach:**

- X Ice climbing with two ice tools.

**5.7. Ski crampons**

Participants ...

- ✓ are aware of the importance of ski crampons on ski touring in high altitudes (U)
- ✓ realises at an early stage when to mount ski crampons (A)
- ✓ is able to give mounting and usage suggestions for climbing with ski crampons (T)

**Methods:**

- [Outdoors/group] Demonstrant and explain. On tour, the group leader gives explicit instructions as to when ski crampons are needed.

## 6. EQUIPMENT [2 units]

### 6.1. Technical equipment

Participants...

- ✓ know harness, ice as, crampons, carabiners and ice screw and are familiar with their use (A)
- ✓ know about differences in quality and how to check for proper operation and can help and advise group members in these questions (A)

#### Methods:

- [Indoors/group] Equipment bazaar – discussion of technical equipment
- [Outdoors/group] Use of the equipment on tour.

### 6.2. Clothing

Participants ...

- ✓ know about the necessity of functional clothing for ski touring in high altitudes (V)

#### Methods:

- [Indoors/group] Equipment bazaar – discussion of the most important pieces of clothing
- [Outdoors/group] Use of the equipment on tour. Possibly group discussion.

## **7. DEMONSTRATION LESSONS [3 units]**

On the last day of the course, participants give demonstration lessons either at differently themed stations or during a demonstration ski tour, revising and practicing essential leadership qualities. Participants receive feedback on their performance promptly.

The topics listed below are discussed during the demonstration lessons and revisions. There will be time for questions and discussions should anything have remained unclear. Presentations in front of groups are practiced.

- Avalanche bulletin
- Behavior on glaciers
- Ankerpoints on snow and ice
- Direct Pull
- Single Pulley
- Orientation
- Map
- Planning of glacier skitours
- GPS
- Avalanche beacon check
- Equipment Skihochtour
- Rescue equipment
- Rescue in case of an avalanche

## A) Evaluation of the participants

Successfully completing the training course „Übungsleiter Skihochtouren“ qualifies the participants to guide and instruct. It is the responsible trainer who decides if a participant has passed or failed. The criteria for a pass respectively the key qualifications are communicated at the beginning of the course (resp. are available online.)

### Key qualifications

During the entire period of the course, participants are observed and evaluated using the following key qualifications. (The order in which the key qualifications are listed below does not imply order of importance.):

- **(Q 1) Fitness & sports motor skills:** The participant possesses the necessary physical (endurance, strength, technique) and psychological (courage, prudence) characteristics and skills necessary for successfully practising the sport. Regarding endurance/fitness, an ascent of 1000 meters altitude difference (in about 3 hours) is expected to be well within the limits of the participant's performance capacity. The participant is expected to descend swiftly, in a controlled manner and (almost) without falling.
- **(Q 2) Expertise:** The participant is sufficiently competent in order to guide a group on off-piste ski tours in glacier environments or in order to teach a group basic skills for agreeable skihochtour touring while being aware of the risks involved. In order to prevent accidents the participant can put into practice the decision making algorithm (check 1 and check 2) and the Stop or Go © standard procedure.
- **(Q 3) Risk management & self assessment:** The participant possesses pronounced risk awareness and displays generally prudent behaviour. They have realistic self assessment and one can trust that they will only take responsibility for those guided tours and courses for the Alpenverein that they can definitely cope with.
- **(Q 4) Willingness to learn & learning progress:** The participant is curious and very eager to improve their know-how and to share their personal experience. They can quickly and successfully put demonstrations, explanations, directions and corrections into practice and integrate them into their behavioural repertoire.
- **(Q 5) Social skills:** The participant is sufficiently emphatic and thoughtful, able to communicate with others and is appreciative towards them, has leadership qualities and is a team player. These skills are to be evaluated taking into account the specific educational objective.

### pass/fail

Participants of the course „ÜL Skihochtouren“ have passed if the responsible trainer gets a „positive“ impression in all 5 key qualifications. A „fail“ – if the deficit in one key qualification is too pronounced – results in retaking the entire course. „Pass/fail“ is communicated on the last evening of the course, possibly on the last day of the course.

## B) Time Table

	Day 1	Day 2	Day 3	Day 4	Day 5
7:00	Arrival				
8:00					
9:00					
10:00	Check in & move into accommodation Course opening	Leadership Skills Orientation Uphill Technique	Leadership Skills Orientation Rescue Technique	Leadership Skills Orientation Individual and Group	Demonstration Lessons
11:00					
12:00	Equipment check Methodological basics Leadership skills				
13:00					
14:00					
15:00	Break	Break	Break	Break	Departure
16:00					
17:00	Snow and Avalanches	Rescue Technique	Orientation Weather	Equipment	
18:00	Dinner	Dinner	Dinner	Dinner	
19:00					
20:00	Tour Planning	Tour Planning	Tour Planning	Pass/Fail Law and Insurance	
21:00					
22:00					

