

# Intermediate Snow Skills

## Participants

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## Objective

For the recent climb school students with little snow experience this will be an opportunity to practice being an effective member of a roped team on snow/glacier. This includes: being able to efficiently tie into the rope system, move confidently on steep snow using crampons and ice axe, and clip efficiently through snow anchors. There will also be a team rescue with a Z-pulley after a fall into a crevasse.

## Timeline

### Sunday April 29th

- 5:45 am Meet at State Motor Pool
- 6:00 am Depart for Mt Hood
- 8:00 am Arrive at Timberline Lodge (End of the overflow parking lot)
- 8:15 am Depart from the parking lot
- Arrive at practice snow fields near the White River Canyon
- Practice skills till we run out of things to do or 4:00pm cutoff

## Topics of Discussion

### Crampons-If conditions permit

1. Crampon Technique
  - A. French- Foot position perpendicular to the slope. AKA Duck walking
  - B. German- Using the front Points to go direct up the slope. AKA "Front Pointing"
  - C. American- combination of French and German

### Snow Anchors and Belay Techniques

1. Types of snow protection: Picket, Snow fluke, Ice Axe, Ice Screw, or anything you can tie of and burry as a dead man.
2. Types of Anchors:
  - A. Vertically placed Picket- Place it 10 degrees back of vertical so that if it takes a load it will sink deeper.
  - B. Deadman- Most commonly done with a horizontally placed picket buried beneath the snow. Can also be done with shovel handle, Ice axe, or other items girth hitched and buried.
  - C. Seated snow belay- dig or stomp out U shaped seat giving you a snow mesa to wrap your legs around. When seated plunge your ice axe behind you in line with the direction of a fall. This will give additional security in the event of a larger than anticipated fall, or belaying someone larger than you are.
3. Select the best belay method for the type of anchor or type of fall anticipated.
  - A. Hip Belay- Quick and Easy to set up
  - B. Slip, Slap, Slide- Best for belaying from above the climber
  - C. PBUS- **P**ull, **B**rake, **U**p-**S**lide. Best for belaying a lead climber in a high fall probability scenario

### Z-Pully Demonstration

1. **Communication**

- A. Confirm with all the team the fall has been arrested.
  - B. One by one, starting with the person farthest from the fall come out of the arrest position. Confirming with the climbers still in the arrest position that they have the load.
  - C. Establish roles in the rescue operation.
2. **Building the Anchors**
    - A. Identify the fall line.
    - B. Two pieces of protection for your anchor. For sake of this exercise we will be using pickets buried as deadman anchors.
    - C. Use a longer sling to connect your to anchor points to a master point. Attempting to equalize as much as possible with the fall line. (I carry a 240 cm Mammut dyneema sling for just this purpose. Its light and will not freeze)
  3. **Transfer the load**
    - A. Attach a longer prussik loop to the rope with a prussik knot above the climber still arresting the fall
    - B. Use the Munter Mule knot to attach the prussik loop to the anchor
    - C. Have the climber holding the load slowly release the weight of the fallen climber on to the anchor
  4. **Rig pulleys for mechanical advantage**
    - A. Attach a locking carabiner with a pulley to the master point. In the event that there is only one pulley in the group, use a locking carabiner and a belay device to mind the prussik. Afterward, tie a catastrophe knot such as a figure 8 on a bite to prevent the rope from passing back through the pulley/belay device in the event the prussik knot holding the fallen climber fails.
    - B. Attach another prussik loop to the rope going to the fallen climber with a prussik knot. Afterward, attach the loop to the strand of rope not holding the fallen climber, using a pulley and locking carabiner. Place the rope through the pulley, then attach the pulley to the prussik loop using the locking carabiner.
  5. **Protect the lip:** Either during or after the assembly of the z-pulley, a member of the team will prussik down to the lip of the crevasse to attempt to communicate with the fallen climber. While there, place an ice axe at the lip of the crevasse underneath the rope. This will prevent the rope from digging into the crevasse lip any further, not sucking the fallen climber into the wall of the crevasse just below the lip.
  6. **Hauling and resetting the Z-Pulley**

### **Steep Snow Rope Team Travel**

1. Setting up the ropes and getting on the ropes set up for glacial travel.
2. Kicking steps: Think about improving the steps, don't just walk mindlessly.
3. Communication: talk amongst your teammates. Pace, observations, conditions, jokes, etc...
4. Clipping through protection

## **Important Information**

### **Emergency Contacts**

- Clackamas County Sheriff – (503) 655-8218
- In case of emergency dial 911.
- Mike Niemeyer: 503-910-9726

Note: I will be carrying an InReach messenger

### **Permits**

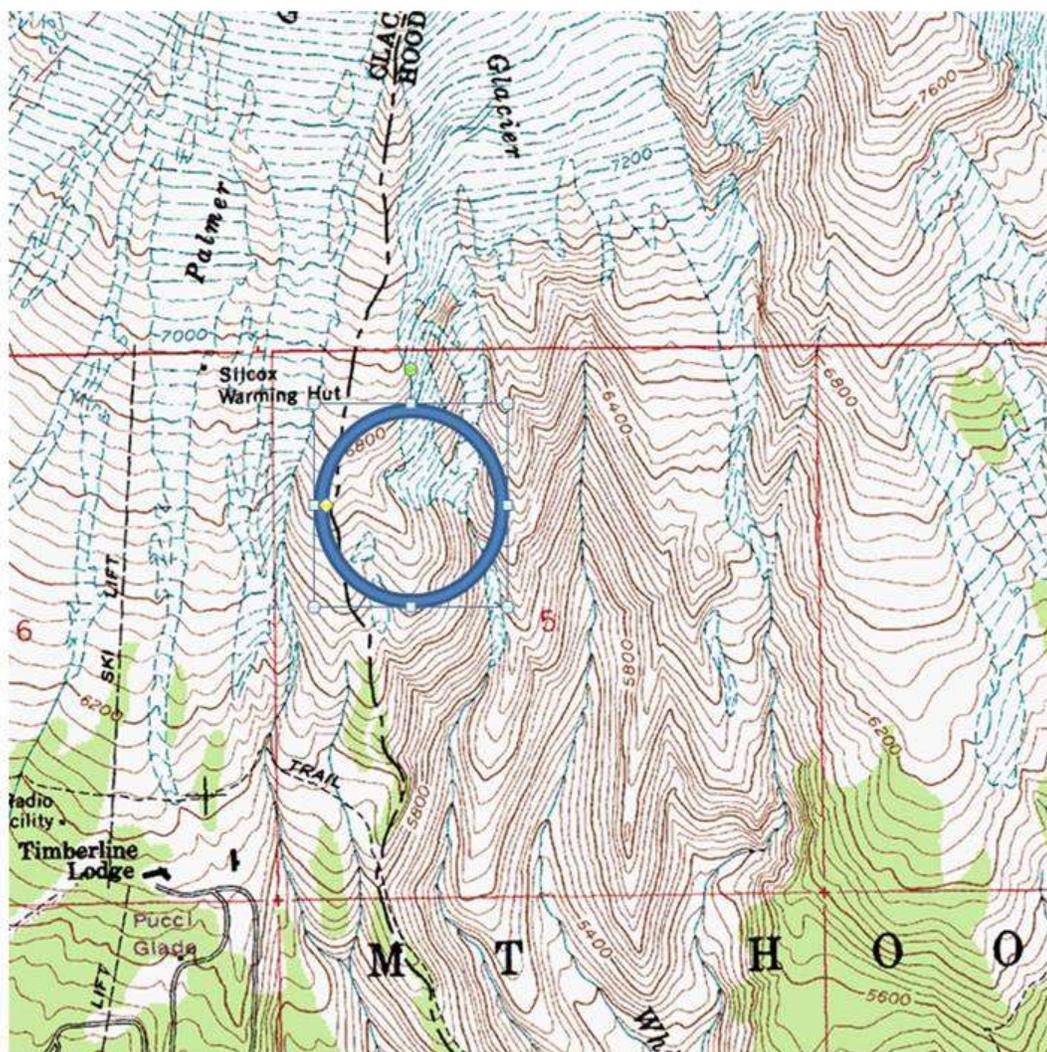
A snow park permit will be required to park in the overflow parking. Please be responsible and pick one up prior to your departure from Salem.

## Weather

- NOAA (~6000'): <http://forecast.weather.gov/MapClick.php?lon=-121.69423354492186&lat=45.340102862949465#.Vt3iisfX8b0>
- NOAA (~9600'): <http://forecast.weather.gov/MapClick.php?lon=-121.69696025390624&lat=45.375774379080354#.Vt3iMsfX8b0>
- <http://www.mountain-forecast.com/peaks/Mount-Hood/forecasts/3426>
- <http://www.climbingweather.com/Oregon/Mt.-Hood>
- Avy Forecasts: <http://www.nwac.us/avalanche-forecast/current/>

## Location

We will be in between the Timberline Ski Area and the White River Canyon for the day.



### Gear List

	<b>Food &amp; Water</b>		<b>10 Essentials/Personal Items</b>
	food & extra food		Topo map & compass
	Water bottles, 3-32oz or bladder (see below)		First aid kit
	*Equivlent bladder ok if temps above 32°F		Head lamp, and extra batteries
			Sunglasses/sunscreen/lip balm
			Pocket knife or multi-tool
			Fire starter, matches or lighter
	<b>Clothing</b>		Emergency whistle
	Base layer pants(wool or synthetic)		Toilet paper, and blue bag
	Base layer top (wool or synthetic)		GPS and/or altimeter (optional)
	Boots, crampon compatible		Radio (Channel 10 Code 5) If you have one
	Gaiters		SPOT, InReach, or Per. Locator Beacon (opt)
	Gloves, softshell or fleece		Camera (optional)
	Gloves or mittens, warm/water proof		Cell phone (optional)
	Hat, sun		Duct tape
	Hat, warm		Ear Plugs (optional)
	Neck Gaiter/Buff (Optional)		Two large garbage bags
	Nylon/polyester shorts (optional)		Bandana or snot rag (optional)
	Hardshell pants, waterproof/breathable		Emergnecy Tarp (Recommended)
	Softshell pants		Accesory Cord or Paracord (Recommended)
	Hardshell jacket, waterproof/breathable		
	Ski goggles (optional)		
	Socks, liner		<b>Camping Gear (shared with tent mate *)</b>
	Socks, thick wool		
	Mid-layer, fleece or softshell jacket		
	Puffy belay jacket, down or synthetic		
	<b>Climbing</b>		
	Crampons (Pre-Adjusted to your boots)		
	Helmet		
	Ice axe		
	Pack (Must fit all gear listed, inc group gear)		
	Harness		<b>Group Gear</b>
	Belay/rappel device		3 ropes, 50m
	Locking carabiners, 3		6 pickets (2/rope team)
	Non-locking carabiners, 3		Radios (Channel 10 code 5)
	Prusiks		Wands
	Pulleys (If you have them, bring them)		
	Trekking poles (optional)		
	2-120cm slings or 1-240cm length sling		