

# Required Compass Features: Seattle Wilderness (Basic) Navigation Course

Seattle Mountaineers—Revised Apr 2016

1. **Adjustable declination:** If there is one feature that simplifies map and compass work, this is it. Such compasses can often be identified by the presence of an adjustment screw, usually brass or copper-colored, and a small key attached to the lanyard. It allows for moving the orienting arrow in relation to the azimuth ring.
  - **All students MUST have a compass with adjustable declination.** The presence of a declination scale does not guarantee that it can be adjusted. The "set-screw" adjustment on most compasses is more user friendly than the "tool-less" adjustment found on many Brunton models.
  - Even if you already have a compass without adjustable declination, you may not use it in this course.
2. A **transparent rectangular base plate** with a direction of travel arrow or a sighting mirror.
  - Transparency allows map features to be seen underneath the compass.
  - A rectangular shape provides straight edges and square angles to plot and triangulate on the map.
3. A **0-360 degree bezel** (the rotating housing) marked clockwise from 0 to 360 degrees in increments of two degrees or less. In general, bezels should be large to turn while wearing gloves. Do not get one marked in 0-90 degree quadrants! Do not get one marked in 0-6400 mils!
4. **Meridian lines:** Parallel 'meridian lines' on the bottom of the circular compass housing rotate with the bezel when it is turned. Longer lines are better. The meridian lines run parallel to the north-south axis of the bezel, however turned, for plotting and triangulating on the map.
5. A **ruler and/or gradient scale** engraved on the straight edges, for measuring distances. In the U.S., the 1:24,000 scales (rather than 1:25,000) are preferred.
6. A **3 to 4-inch base plate with at least one straight edge.** A longer straight edge makes map work easier.

## Additional recommendations:

- A sighting mirror in the cover: Reduces error when sighting a bearing. Allows you to turn and set the bezel while sighting. A mirror is not required, but helpful.
- A liquid-filled housing: Reduces erratic needle movement (common on good compasses). In some cases, steadying the compass needle can be difficult.
- An inclinometer: A gravity driven arrow that allows you to measure slope angle. Not required, but helpful.
- Global vs. Hemisphere Needles: Northern Hemisphere models are usually cheaper than global models. Either is fine.

**Current favorites:** Silva, Suunto, Kasper & Richter, and Brunton are the common favorites. Their quality and usability varies, so **keep any receipt!** We have unfortunately seen many defective compasses in the past. Beware the UST ~\$7 knock-off compass available via Amazon and other outlets. Our gear tests show it to be unreliable.

**Silva** has the Silva Ranger 515 CL (Not the CLQ!), with a sighting mirror. A Silva without a mirror is the Silva Explorer Pro (Not the 203 or Polaris!). Silvas are available at Cabelas or online.

**K&R** has the Sherpa and Alpin that use the 1:25,000 vs 1:24,000 rulers. They are available online.

Several **Brunton** compasses meet our requirements, but have been problematic because of their 'tool-less declination', lack of clearly visible meridian lines or scales, and curvy shapes. The tool-less declination adjustment can cause the compass to separate into pieces. Those with minimal meridian lines should be avoided. The models suited for our course are the TruArc 15 (mirrored), and the TruArc 5 (non-mirrored). The TruArc 10 has the advantage of measurement scales, but the disadvantage of the curvy left side. The TruArc 3 lacks clear meridian lines and is very short. Bruntons are available at REI, Cabelas or online. Just be very careful with the tool-less declination adjustment.

The **Suunto** models have had accuracy problems in recent years, but the company says those issues have been resolved in the 2016 model. The older MC-2's frequently needed to be set 2-3 degrees higher (i.e., 16 degrees East would need to be 18-19 degrees East). A couple models have our required features, such as the MC-2 (mirrored) and M-3 (non-mirrored). Be careful of the part numbers so that you avoid the "quadrant" compass with 0-90 degree increments rather than the recommended 0-360 degree markings. Suunto is currently available at REI, Feathered Friends, and online.

## Revision History (Rev 06Apr2016/bs)

15Sep2015	Peter Hendrickson	Base Version.
06Apr2016	Brian Starlin	Removed Silva Ranger 75. It was an anniversary edition. Clarify Silva Ranger models. Clarified Suunto MC-2 magnetic error for the 2016 model. Clarified Brunton options.

