

Topographic maps
EPSC 240, Geology in the Field
Sept 24, 2018

Key concepts for Week 4:

Azimuth: Direction relative to north (000°) as measured with a compass. Varies from 000° to 360°.

Contour lines: Lines of constant elevation, parallel to water shorelines on a landscape. If you walk along a contour, you don't go up or down hill. Contours are regularly spaced in the vertical dimension (see '*contour interval*').

Contour interval: The change in elevation from one contour line to the next. Usually labelled on the map, or can be determined from labels on contour lines themselves. Since the contour interval is constant on a topographic map, the horizontal spacing between the lines can be used to determine the slope of the landscape in any direction.

Closed contour: A contour line which forms a loop, indicating either a hilltop (everything inside the contour line is higher) or a basin (everything inside the contour line is lower).

Benchmark: A point of precisely-measured elevation, usually shown on a topographic map by an isosceles triangle symbol.

in situ: This Latin term (always written in italics) means 'in place' or 'in position.' In geology, this term is used to describe rocks that have not been moved, e.g., an outcrop of bedrock poking up above the soil.

Sometimes, large boulders which are partially buried may be mistaken for true outcrops. These boulders can be interesting in their own right, but it is important to establish that rocks are *in situ* before using observations or measurements on those rocks to extrapolate to regional geology.

Tips for topo maps:

Slope: The average slope between two points on the landscape can be calculated from their distance apart measured on the map, and their elevation difference as indicated by the topographic contours.