

Geology 405 : Volcanoes and the Solid Earth

The geologic history of the Pacific Northwest provides excellent examples of an active tectonic margin including accretion of oceanic crust and arc terranes and current arc volcanism. We examine magma generation and differentiation, volcano morphology, and physio-chemical processes of volcanoes from Earth's mantle to the surface through interpretation of rock suites from the Stillwater Complex, the Cascade and Alaska-Aleutian arcs, and the Columbia River Basalt Group. Lab activities include reading the primary literature, hand sample identification, use of petrographic microscopes, interpretation of thermodynamic phase diagrams, an introduction to computer modeling of magmas (e.g., MELTS), and field trips possibly including one overnight field trip.

Credits 4

Prerequisites

Chemistry 125 and 135 (or Chemistry 140); and Geology 270 (formerly Geology 343).

Corequisites

Includes a required corequisite lab, Geology 405L.