

EASC 412
D. Marshall
(604) 291-5474
Rm: P9308
marshall@sfu.ca

Course Outline
ADVANCED GEOCHEMISTRY

Application of thermodynamics to earth science problems, experimental study of mineral equilibria, theoretical development of geothermobarometers for earth systems science, the importance of aqueous and gaseous phases in the transport and precipitation of geological phases framed within the context of global tectonics, and the application of stable and radiogenic isotopes to problems within the earth sciences.

Prerequisites:
EASC 208 and 301

Course Topics

- ❖ Solid-Solution and Fluid Mixing
- ❖ Thermodynamics
- ❖ Isotope Geology
- ❖ Stable Mineral Assemblages, Phase Diagrams
- ❖ Geothermometers
- ❖ Crustal Fluids and Reservoirs

Course Text

Anderson, G. Thermodynamics of Natural Systems. Wiley & Sons, New York.

Course Grade

1. Midterm examination	15%
2. Laboratory assignments	15%
3. Final lab examination	25%
4. Term Presentation	15%
5. Final theory examination	<u>30%</u>
	100%