

Igneous Petrology

Earth Sciences 301

Section: D100

Term: 2007 Fall

Instructor: Kevin Cameron

Discussion Topics: Course Outline

Igneous and Metamorphic Petrology will examine igneous and metamorphic rocks in the contexts of field geology, tectonic environment, mineralogical and chemical composition, and experimental petrology. Lectures will deal with phase relations, melt generation and transport, facies characterization, geochemical modelling, mode of emplacement, and tectonic framework. Laboratory exercises will focus on rock suites using optical microscopy and computer manipulation of geochemical analyses.

A two-day field trip will be run on a weekend early in the semester (currently planned for mid-late September).

Selected Course Topics

1. Origin and evolution of magma. Phase relations.
2. Magmatism in convergent, divergent, and intraplate environments.
3. Field and petrologic characterization of igneous and metamorphic rocks.

Grading:

Required Texts: An Introduction to Igneous and Metamorphic Petrology. John D. Winter. 2001. Prentice-Hall.

ISBN 0-13-240342-0.

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Recommended Texts: Introduction to Mineralogy, William D. Nesse, 2000, Oxford University Press, ISBN 0-19-510691-1 (Note: This is the text used for EASC 202 and 205) or any other good text on Optical Mineralogy (see instructor for a possible list).

Materials/Supplies: Handlens.

Prerequisite/Corequisite: EASC 205 and 208.

Notes: None.

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