

IGNEOUS AND METAMORPHIC PETROLOGY OUTLINE 2015-2016

Introduction

Igneous rocks: nomenclature and classification; magmatic processes.

Application of one, two and three component phase diagrams to interpret the formation of igneous rocks.

Metamorphic rocks: types, classification, mineral parageneses.

Labs: the study of rocks in thin section, their mineralogy, textures, origin and classification.

Instructor: Greg Finn, 13th Floor Schmon Tower (greg.finn@brocku.ca)

Lectures: Monday, Wednesday and Friday from 8:00 to 9:00; Room D319

Labs: Monday from 2:00 to 5:00; Room D308

The homepage for this course can be found at:

<http://www.brocku.ca/mathematics-science/departments-and-centres/earth-sciences/people/gregory-c-finn/igneous-and-metamorphic-petrology>.

This site contains all lecture material covered in the course as well as copies of all the overheads used during the lectures. This is comparable to the Optical Mineralogy site, and I would appreciate your comments/criticisms of the contents of the pages to improve their usefulness to students.

Recommended Text:

Lectures:

There is no specific text for the lecture portion of this course.

Labs:

Introduction to Optical Mineralogy: Nesse (used in ERSC 2P22).

Supplementary Texts

Petrography and Petrology

Philpotts - Petrography of Igneous and Metamorphic Rocks

Blatt and Tracy - Petrology, Igneous, Metamorphic and Sedimentary

Hall - Igneous Petrology

Yardley - An Introduction to Metamorphic Petrology

Cox, Bell and Pankhurst - The Interpretation of Igneous Rocks

Hatch, Wells and Wells - Petrology of the Igneous Rocks

Mason - Petrology of the Metamorphic Rocks

Best - Igneous and Metamorphic Petrology

Spry - Metamorphic Textures

MacKenzie and Guilford - Atlas of Rock Forming Minerals

Phase Diagrams and Thermodynamics

Ernst - Petrologic Phase Equilibria

Ehlers - The Interpretation of Geological Phase Diagrams

Wood and Fraser - Thermodynamics for Geologists

Evaluation

Labs (11) 30%

Lab Exam 15%

(Monday December 7, 2015, 2:00 to 5:00, D308) FIXED

Assignments (3) 10%

Midterm 10%

(Wednesday October 28, 2015, 8:00 to 9:00) FIXED

Final 35%

Date TBA