

# ERTH 3207 Metamorphic Petrology and Processes - Syllabus

## Course description

ERTH 3207 Metamorphic Petrology and Processes [0.5 credit]

Genesis of metamorphic rocks as determined from field, petrographic and geochemical data.

Lectures two hours a week, a laboratory three hours a week and a field excursion.

Precludes additional credit for ERTH 3202 (no longer offered).

Prerequisite: ERTH 2104.

## Course objectives

1. Introduce the important methods of a metamorphic geologist.
2. Introduce known facts and recent hypotheses about the evolution of metamorphic rocks.
3. Introduce some of the important analytical methods used in modern metamorphic petrology.
4. Learn how metamorphic rocks are classified and named.
5. Identify common metamorphic minerals and rocks in hand specimen and thin section.
6. Reinforce some of the key thermodynamic variables and their relevance to metamorphic petrology.
7. Learn how to use metamorphic petrology to better understand the past tectonic behaviour of Earth's crust.

## Times and locations

Lectures will be held Thursdays from 9:35 - 11:25 in 3120 HP, and the lab sections will be held Fridays from 11:35 - 14:25 and 14:35 - 17:25 in 2120 HP.

## People

Instructor: Fred Gaidies

Office hours: By appointment via email

Email: fred.gaidies@carleton.ca

Teaching assistant: TBA

Office hours: TBA

Email: TBA

Teaching assistant: TBA

Office hours: TBA

Email: TBA

## Textbooks

Yardley, B. W. D., 1989. *An introduction to metamorphic petrology*. Longman. This is a classic text of and a good introduction to metamorphic petrology. It is out of print but available through Amazon, etc. This textbook is **recommended** for the course.

Best, M. G., 2003. *Igneous and metamorphic petrology*. Blackwell. This very good introductory book to both igneous and metamorphic petrology is **recommended** for the course.

Nesse WD (2012) Introduction to Optical Mineralogy. Oxford University Press. This is an excellent text on the optical properties of minerals, and you will be needing it in all your labs. Therefore, this text is **required** for this course.

### **Online resources**

This document is available on cuLearn as are many others relevant to the course. Frequently, visit the homepage of this course for updates with respect to the course plan. The course plan contains information on lecture and laboratory topics.

The course website contains most of the laboratory assignments, and you will have to print and read them carefully before the respective labs and lectures. Lecture notes will be made available before each lecture.

### **Course requirements**

It is recommended that students attend all lectures, laboratories, and the field excursion. Arriving late to class is distracting to students, professor, and teaching assistants.

Students are encouraged to complete and hand in all their lab assignments (8) for feedback and consultation. However, only six comprehensive labs (Labs 3-8) must be completed and handed in at the end of the time allotted (1-3 weeks depending on lab). These six labs will be part of the final grade (see below). The ERTH 3207 field excursion is part of lab 3.

Both, the lab component of the course and the final exam must be passed in order to pass the course. You are required to obtain a hand lens (10x magnification is best) before the first lab. Reasonably priced ones are available at the Carleton University Science Stores (Room 118, Steacie Building).

There will be two exams during the course: (1) A lab exam (Friday, Nov 30, 12:00 - 14:00 and 15:00 - 17:00 in 2120 HP), and (2) a final exam during the official examination period (to be scheduled by the registrar, 3 hours, room TBA) that will primarily focus on lecture material. Open notes are allowed for the lab exam.

### **Grading**

12%	Lab 3
07%	Lab 4
07%	Lab 5
07%	Lab 6
10%	Lab 7
07%	Lab 8
25%	Lab exam
25%	Final exam

### **Academic Integrity**

It is your responsibility to review Carleton's policy on Academic Integrity - Section 14 of the Calendar:

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/acadregsuni-v14/>

## **Plagiarism**

The instructor is required to report all incidents (or suspected incidents) of plagiarism to the Dean. All work handed in must be your own work. Plagiarism and cheating are viewed as being particularly serious and the sanctions imposed are accordingly severe. Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy. The Policy is strictly enforced and is binding on all students. Plagiarism and cheating – presenting another's ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student – weaken the quality of the graduate degree. Academic dishonesty in any form will not be tolerated. Students who infringe the Policy may be subject to one of several penalties including: expulsion; suspension from all studies at Carleton; suspension from full-time studies; a refusal of permission to continue or to register in a specific degree program; academic probation; or a grade of Failure in the course.

## **Academic Accommodations**

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

### Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. [carleton.ca/pmc](http://carleton.ca/pmc)

### Religious Obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: [carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf](http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf)

### Pregnancy Obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: [carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf](http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf)

### Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and its survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: [carleton.ca/sexual-violence-support](http://carleton.ca/sexual-violence-support)

### Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the

university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

For more information on academic accommodation, please contact the departmental administrator or visit: [students.carleton.ca/course-outline](https://students.carleton.ca/course-outline)