

ERTH 2406: GEOLOGY AND MAP INTERPRETATION – WINTER 2022

Welcome to Geology and Map Interpretation. The course focused on documenting and interpreting fundamental information about rocks and map patterns and interpreting geologic history. My email is SharonCarr@CUNET.carleton.ca - don't hesitate to email anytime with your questions. I will be available to meet with you after classes or labs, during scheduled office hours, and by appointment.

This document and the Brightspace course website contain information about the course, instructor contact information and academic policies. It also contains links to a range of student-focused organizations & student support (e.g. Earth Sciences groups and activities, Health Care Resources, Ojigkwanong Indigenous Student Centre, Paul Menton Centre, Science Student Success Centre, etc.). I encourage you to take advantage of these resources.

The teaching assistants and I want to see you succeed in this course and will do whatever we can to keep you engaged and help you learn!

COURSE DESCRIPTION:

ERTH 2406 [0.5 credit] Geology and Map Interpretation: Analysis and interpretation of geological features and processes using rocks, maps and cross sections. Introduction to computational methods. Prerequisites: EARTH 2102 and EARTH 2004. Lecture two hours a week and laboratory three hours a week.

COURSE DELIVERY:

It was planned that classes and labs would be on-campus for the winter term; however, in December the decision was taken to move the first three weeks of classes online with the hope that we will be back in the classroom after Jan 29th. Here are explanations of the two modes of course delivery.

A. SYNCHRONOUS ONLINE COURSE DELIVERY DURING REGULARLY SCHEDULED LECTURE AND LAB TIMES ON THURSDAYS BETWEEN JANUARY 12th & JAN 28th (OR UNTIL IN-CLASS LEARNING HAS BEEN FORMALLY SCHEDULED BY THE UNIVERSITY)

You will need access to a computer with mic and video camera, capability of printing figures, access to power point as well as other office programs, ability to scan or photograph hand-made drawings and a pdf file maker. Please let Sharon know ASAP if you don't have these capabilities or have difficulty with internet connection.

Lecture: 2:35 - 4:25 PM (Thursday) synchronous course delivery via zoom: Lectures, including in-class exercises and discussions, will be held by zoom video conference. We will make use of breakout rooms for group work and discussions. The zoom link for the lecture will be posted on Brightspace; the same link will be used every week. ***Lectures will be recorded and posted on Brightspace.***

Laboratory A01: 2:35 - 5:25 PM (Friday) synchronous course delivery via zoom.

Laboratories will be conducted by zoom videoconference with use of break out rooms to promote student interaction. The zoom link for the lab will be posted on Brightspace; the same link will be used every week. ***The laboratory introduction will be recorded and posted.***

Zoom Etiquette & Protocols:

- ✓ Ask questions anytime (i.e. type in the chat, raise your hand, or just speak up even if it means potentially interrupting)
- ✓ Mute your mic unless you intend to speak (to prevent distracting background noise). Manage 'supress background noise' in Advanced Zoom Audio menu.
- ✓ During lectures, use your video as you see fit
- ✓ During labs, activate your video (if possible)
- ✓ During in-class exercises, break-out rooms, and discussions, activate your video (if possible)
- ✓ ***For technical difficulties during class or lab time***, contact Instructors immediately, in the moment, via chat, text or email for trouble shooting or information about using an alternate platform.
- ✓ ***If the Instructors have technical difficulties***, check email and Brightspace page for instructions. If it is not possible for the class to resume, then replacement material will be posted in due course.

B. ON-CAMPUS CLASSES AND LABS (START DATE, FEB 03 AT THE EARLIEST, TBA)

Lecture: 2:35 – 4:25 AM (Thursday) Herzberg HP 3120: Lectures, including in-class exercises and discussions, will be held "in person", with full adherence to covid safety protocols. ***Lecture slides will be available on Brightspace; however, lecture participation will not be available via videoconference, nor will lectures be recorded or posted.***

Laboratory A01: 2:35 - 5:25 PM (Friday): Laboratories will be conducted "in person" in the laboratories within the Department of Earth Sciences with full adherence to covid safety protocols (e.g. two simultaneous labs with low occupancy in each lab). ***Lab introductions will not be posted.***

Teaching Assistants (weekly office hours, with zoom links, will be posted on Brightspace; appointments at other times are available upon request; emails will be answered):

Rafael Bacha (RafaelBacha@cmail.carleton.ca)

Kimberly Trebus (KimberlyTrebus@cmail.carleton.ca)

MARK DISTRIBUTION:

▪ Course participation including reading assignments	20%
▪ In-class polls, quizzes & assignments	not graded
▪ Lab and field manual term project	20%
▪ Laboratory assignments & projects	40%
▪ Quizzes	20%

Note that completion of all components of the course is required to pass the course (i.e. you must complete a majority of the reading assignment, a majority of the laboratories, the lab and field manual project, the midterm quiz, and the final quiz). A total percentage of $\geq 50\%$ for the course is required to pass the course.

Late Assignment and Lab Policy. Late assignments and labs will be accepted without penalty in the instance of illness, emergencies, technical issues, etc. **but you are required to contact S. Carr** prior to the deadline or **within 24 hours after the deadline** (e.g., via email) to make arrangements. Otherwise, 10% per day will be deducted for each day late. Assignments and labs will not be accepted more than 6 days after the normal due date.

Conflicts with Course Requirements:

If you have a conflict with course requirements, **bring this to the attention of S. Carr beforehand.**

Missed Course Requirements Due to Illness:

If a lab, assignment or exam is missed due to illness, contact S. Carr, no later than 24 hours after the deadline regarding a deferral. In the case of a serious illness, see the rules concerning deferral of an exam or assignment at <https://carleton.ca/registrar/specialrequests/deferral/>.

COURSE REQUIREMENTS – MY STUDENT RESPONSIBILITIES ARE:

- **Act with academic integrity**, which is a commitment, even in the face of adversity, to the values of honesty, trust, fairness, respect and responsibility.
- **Be equipped:** i.e., computer with camera and mic, textbook & lab manual, hand lens, scale, compass, protractor, calculator, graph and tracing paper, stereonet, fine point pencils with hard 2H pencil leads, pencil sharpener, eraser, colored pencils.
- **Email SharonCarr@cunet.carleton.ca or send a message right away or within 24 hrs** of the deadline to advise of absences due to illness, emergencies or other difficulties.
- **Regularly check the Brightspace webpage, course outline and my Carleton emails for a synopsis of the weekly rollout including:**
 - structural themes of the week
 - office hours

- reading assignments, laboratories and their deadlines
- required resources and tools to have at hand for each class or lab
- **Students with accommodations via the Paul Menton Centre (PMC).** *Notify S. Carr well in advance of PMC accommodations (e.g. two weeks before an exam).*
- **Participate in the weekly lectures:** come to class with the resources required for the in-class exercise; engage with in-class activities and the posted resources.
- **Participate in the weekly laboratories:** come to the labs with the required resources; engage with the instructors and classmates
- **Complete and submit laboratory and reading assignment quizzes on time.**

ERTH 2406 COURSE LEARNING OUTCOMES:

By the end of this course, I will be able to:

1. Create (by hand or computer) geological and subsurface maps, cross sections and 3D illustrations from geological information.
2. Identify and describe minerals, textures, and primary or secondary structures in rocks. Classify, name and interpret sedimentary, igneous and metamorphic rocks.
3. Read geologic maps, cross-sections, 3D illustrations and legends (i.e. recognize map patterns; assess contact relationships; evaluate sedimentary, igneous, metamorphic and/or structural history) and propose a geological history.
4. Interpret and evaluate structural and geological history from rocks, maps, geophysical information and reports.
5. Distinguish between observations and interpretations. Write and explain accurately and concisely about rocks, map areas or projects; justify and assess conclusions.

LABORATORY MANUAL (on reserve in the library):

Rowland, S.M., Duebendorfer, E.M. and Gates, A. 2021. Structural Analysis and Synthesis, A Laboratory Course in Structural Geology. Published by Wiley Blackwell. **Fourth Edition (Do not acquire the 2007, 3rd edition).** This book is required; readings and problems form the basis for some labs. Purchase from the bookstore, or on-line. This book contains required readings and lab exercises for both 2406 and 3806 Structural Geology next year. **We will cover the first five chapters in EARTH 2406. It is well worth having a copy.**

REQUIRED TOOLS:

Computer equipped with camera and microphone. Geometry set (i.e., with scales in metric and English, protractor); calculator; drafting and mapping tools (e.g., fine point pencils with hard 2H pencil leads, pencil sharpener, eraser, colored pencils); stereonet, graph paper, tracing paper, mineral and rock identification and classification resources, etc.

Appropriate notebook for term lab and field manual project. Compile and organize your own laboratory and field manual, in a field notebook, using laboratory handouts and resource materials. This manual will be useful during this course as well as future courses and field work and is required for EARTH 2802. Include the Geological Time Scale, mineral abbreviations, modal percent estimation charts, grain size and shape classifications, rock and structural naming classifications, and geological symbols, etc.

STUDENT RESOURCES:

Carleton GeoSoc (Dept Undergrad Student Geology Society)	https://discord.gg/pAreZszd
Health & Wellness Resources on Science Student Success Centre (SSSC) webpage	https://sssc.carleton.ca/resources/succeeding
Ojigkwanong Indigenous Student Centre	https://carleton.ca/indigenous/cii/students/ojigkwanong-indigenous-student-centre/
Ottawa-Carleton University SEG student chapter (Society of Economic Geology)	https://www.facebook.com/groups/1512324829077735
Paul Menton Centre PMC)	https://carleton.ca/pmc/
Science Student Success Centre (SSSC)	https://sssc.carleton.ca/

2022 WINTER TERM DATES

Jan 5	University reopens
Jan 10	Winter term classes begin
Jan 24	Last day for registration in winter term classes; last day to change courses
Jan 31	Last day for withdrawal with full fee adjustment
Feb 21	Statutory holiday – University closed
Feb 22 -25	Winter break – no classes or labs
Mar 16	Last day to submit accommodation requests to PMC
Apr 12	Winter term ends
April 14-28	Final exam period Statutory holiday – University closed
April 15	Statutory holiday – University closed

POLICIES, ACADEMIC INTEGRITY AND PLAGERISM

SANCTIONS ARE SEVERE AND ARE STRICTLY ENFORCED. The instructor is required to report all incidents (or suspected incidents) directly to the Dean of Science.

- **First offence, first-year students** (< 4.0 credits completed): No credit for assessment(s) in question, or a final grade reduction of one full letter grade (e.g., A- becomes B-), whichever is a greater reduction
- **First offence (anyone else): A grade of F in the course**
- **Second offence (anyone): A grade of F in the course and a one-term suspension from studies**
- **Third offence: Expulsion from the University**

Academic Accommodations and Human Rights Concerns	https://students.carleton.ca/course-outline/
Academic Integrity and Accommodations policies	https://carleton.ca/senate/senate-policies/
Academic Integrity (Science)	https://science.carleton.ca/academic-integrity/

Academic misconduct

The University has adopted a policy to deal with allegations of academic misconduct. Please review and familiarize yourselves with Carleton's Student Academic Integrity Policy:

<https://carleton.ca/senate/senate-policies/> as well as that of the Faculty of Science: <https://science.carleton.ca/academic-integrity/>. These policies are binding on all students.

Recording policies of video conference activities:

This class or portions of this class and laboratory introductions may be recorded by the instructor or TAs for educational purposes. These recordings will be shared only with students enrolled in the course via the course Brightspace page.

Unauthorized student recording is prohibited. Students requesting the use of assistive technology as an accommodation should direct such requests to the [Paul Menton Centre](#).

Unauthorized student recording of classroom or other academic activities (including advising sessions or office hours) is prohibited. Unauthorized recording is unethical and may also be a violation of University policy. Students requesting the use of assistive technology as an accommodation should contact the [Paul Menton Centre](#). Unauthorized use of classroom recordings – including distributing or posting them – is also prohibited. Under the University's [Copyright Policy](#), faculty own the copyright to instructional materials – including those resources created specifically for the purposes of instruction, such as lectures slides, lecture notes, and presentations. Students cannot copy, reproduce, display, or distribute these materials or otherwise circulate these materials without the instructor's written permission. Students who engage in unauthorized recording, unauthorized use of a recording, or unauthorized distribution of instructional materials will be referred to the appropriate University office for follow-up.

Copyright of course materials

Classroom teaching and learning activities, including lectures, discussions, presentations, etc., by both instructors and students, are copy protected and remain the intellectual property of their respective author(s). All course materials, including PowerPoint presentations, outlines, and other materials are protected by copyright and remain the intellectual property of their respective author(s).

Students registered in the course may take notes and make copies of course materials for their own educational use only. Students are not permitted to reproduce or distribute lecture notes and course materials publicly for commercial or non-commercial purposes without express written consent from the copyright holder.

The Academic Integrity Policy:

- describes those actions and behaviors which violate Carleton University's standards of academic integrity;
- defines the responsibilities of various offices and individuals in upholding the policy;
- specifies the procedures and processes to be followed when an allegation of violating these standards has been made against a student;
- specifies the sanctions that may be applied to a student who has been found to have violated these standards; and,
- describes the appeal and petition processes open to students who feel they have not been treated fairly under this policy.

All work handed in must be your own work. Plagiarism (i.e., presenting another's ideas, arguments, words or images as your own), violation of exam rules, misrepresentation of facts for any academic purpose, using unauthorized material, impersonation, fabricating or misrepresenting research data, disruption of academic activities, obstruction or interference of scholarly activities of another student, unauthorized co-operation or collaboration, or completing work for another student are viewed as being particularly serious, and the sanctions imposed are accordingly severe. Students who infringe the Policy may be subject to one of several penalties including: suspension from a program; withdrawal from courses; a grade of zero, a failure or a reduced grade for a piece of academic work; completion of a remediation process, etc. In particular:

- ✓ My answers to questions, exercises and assignments will be my own work.
- ✓ I will NOT share questions, answers or assignments with anyone else or post them anywhere on the internet, discussion boards, etc.
- ✓ I will NOT share course content (videos, lecture slides, or any other material) with anyone else or post them anywhere on the internet.
- ✓ I am aware of **sanctions** that may be used if I engage in any activity that will dishonestly improve my results in this course.

ACADEMIC ACCOMMODATIONS

<https://students.carleton.ca/course-outline>

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

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

Religious obligation

As soon as you receive your course syllabus, identify any potential conflicts between your religious obligations and course requirements. 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

Academic Accommodations for 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. <https://carleton.ca/pmc/> or email 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. **Contact me (Sharon Carr) at least two weeks before any exams or assignments during the term to ensure that accommodation arrangements are made, and for final exams notify me and submit requests to PMC by March 19th.**

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 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

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>