

Course Syllabus: Fall, 2019

Additional course information can be found on OWL: <https://owl.uwo.ca/portal>

Instructor: Dr. Cam Tsujita; Phone: (519) 661-2111 ext 86740

Instructor's (Cam Tsujita's) Office: Biological and Geological Sciences Building, **Rm 1064**

Department of Earth Sciences: Phone (519) 661-3187. Fax (519) 661-3198

Email: ctsujita@uwo.ca (Please include 'ES 2200a' in the subject line of all emails about this course. Emails without "ES 2200a" in the subject line might be deleted as spam)

Office Hours: 1:00 – 3:00 pm Mondays and Wednesdays (but feel free to drop by whenever you like; if Cam is in his office, he will be more than happy to talk to you).

Teaching Assistants: TBA (determined by Sept., 2019)

Lectures: Mon. & Wed. 11:30-12:30 am; NCB-114

Labs: You will be attending one (1) lab session per week as per your assigned time according to your official course timetable (i.e., one of two sections – (Lab Sec. 002 (**Tues. 2:30-5:30**) or Lab Sec. 003 (**Wed. 6:00-9:00 pm**)), **both held in B&GS Rm. 1053**).

Prerequisites: Any 0.5 Earth Sciences course at the 1000 level or registration in a Major, Specialization, Honors Specialization or Professional program in the Faculty of Science or in the Basic Medical Sciences. **Please note, as per university policy:** Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

Objectives of this course: This is a comprehensive geology course that covers geological processes and products in the context of Plate Tectonics. The course strives to enable students to identify minerals and classify important rock types of Earth's crust, and to understand the tectonic environments and processes in which different rock types are formed, deformed, and transformed. In order to attain these goals, students will receive feedback on their techniques through weekly labs.

Note: this course may be used as an entry course for any Earth Sciences program.

Learning Outcomes: Upon successful completion of this course, the student will be able to: 1. Describe, identify and classify important minerals, rocks, and other Earth materials and interpret their modes of formation based on their observed characteristics.

2. Apply fundamental geologic concepts and methods to the interpretation of the spatial and temporal distribution of rocks, geologic structures, fossils, and geologic resources, as represented in geologic maps and cross-sections.

3. Relate lithologic and structural characteristics of rocks and their successions to plate tectonic processes and environments.

Required text (E-text)

Earth: An Introduction to Physical Geology, Updated Fourth Canadian Edition by Tarbuck, Lutgens, Tsujita, and Hicock, 2019, with Mastering Geology. Code for E-text (with Mastering Geology) available in bookstore.

Other required materials:

1. 10x (or better) hand lens (will be available for purchase from Outcrop Club)

2. Lab assignment outlines (to be posted on OWL prior to each lab)

Power Point slides for note-taking in lectures will be available online on Western University's OWL site at <https://owl.uwo.ca/portal> at least one day prior to each lecture

Laboratory Assignments: As indicated in the "other required materials" section above, students will download lab assignment outlines from OWL. It is the responsibility of each student to download and print his/her own copy of each assignment prior to the relevant lab session.

Note: Labs for this course will start on Tuesday the week of Sept. 16-20, 2019, so there will be no need for you to attend labs until your first official lab period (either Tues., Sept. 17 or Wed., Sept. 18, 2019).

Grading Scheme (and significant dates)

1) <i>Weekly Lab Assignments (20%)</i>	Due at the end of each lab session
2) <i>Midterm Lab Test (10 %)</i>	Tues./Wed., Oct. 22/23, 2019 (1 st hour of lab session)
3) <i>In-Class Midterm Lecture Exam (15%)*</i>	Wednesday, Oct. 28, 2019 (11:30 am, NCB-114)
4) <i>Final Lab Exam (15%)</i>	Tues./Wed., Dec. 3/4, 2019 (Regular lab time)
5) <i>Final Lecture Exam (35%)</i>	During the December exam period
6) <i>Mastering Geology Online Quizzes (5%)**</i>	Assigned dates and deadlines noted in OWL

***Note. Quizzes will be given approximately once a week sometime during regular lecture time. There will be up to ten quizzes in total. If you are absent when a pop quiz is delivered (unless approved by your instructor), you will not receive a mark for that quiz.*

Make-up policy: Labs must be made-up *before the next lab period* unless special arrangements are made. The policy for scheduling a special lab test/exam or lecture exam is indicated in the *Western University Academic Calendar*.

Due dates: Minus 10% per day for late for the weekly lab assignments. If exceptional circumstances prevent you from handing in a lab on time, please contact both the managing TA and the Instructor (Cam Tsujita).

Lecture and Lab Schedule (2019)

Note: The following schedule is tentative and subject to change if deemed necessary by the instructor (keep track of any announcements regarding possible changes). The instructor will adhere to this schedule as closely as possible. However, there may be times in which a particular lecture is longer than anticipated and may therefore “overflow” into another (e.g. if a lecture is cancelled due to unforeseen circumstances such as a “snow day,” if a longer time is needed to help everybody understand an important concept, or if an interesting discussion arises). Please be patient; we will do our very best to catch up if we do fall behind.

And just as a reminder: **Do not treat the slide handouts as a substitute for attending lectures! Doing so will be almost guaranteed to result in a significantly lower mark than desired.** Material covered on the midterm exam and Final Theory Exam will be based not only on textbook readings (and any additional homework readings assigned), but also material covered in the lectures themselves (which may not be covered in the readings). So it is in your best interests that you attend ALL lectures and labs. **Weekly online quizzes will be done via Mastering Geology**, so it is also important to visit that site to ensure you are aware of quiz deadlines.

Week 1 (Sept. 9-13)

Mon. Sept. 9 (Lecture) - Course Introduction and Introduction to Geology and Plate Tectonics

Wed. Sept. 11 (Lecture) - Minerals: The Building Blocks of Rocks

No lab this week

Week 2 (Sept. 16-20) *Note: Labs start this week (B&GS Rm. 1053)*

Mon. Sept. 16 (Lecture) – Minerals: The Building Blocks of Rocks, cont’d

Wed. Sept. 18 (Lecture) – Igneous Rocks and Volcanism

Lab this week: Lab 1: Mineral Properties & Identification

Week 3 (Sept. 23-27)

Mon. Sept. 23 (Lecture) – Igneous Rocks and Volcanism, cont’d.

Wed. Sept. 25 (Lecture) – Sedimentary Rocks

Lab this week: Lab 1: Mineral Properties & Identification, cont’d

Week 4 (Sept. 30 – Oct. 4)

Mon. Sept. 30 (Lecture) – Sedimentary Rocks, cont’d

Wed. Oct. 2 (Lecture) – Metamorphic Rocks

Lab this week: Lab 2: Igneous Rocks & Minerals

Week 5 (Oct. 7-11)

Mon. Oct. 7 (Lecture) – Metamorphic Rocks, cont’d

Wed. Oct. 9 (Lecture) – Geologic Maps and Geologic Time

Lab this week: Lab 3: Sedimentary Rocks & Minerals

Week 6 (Oct. 14-18)

Mon. Oct. 14 (Lecture) – Geologic Maps and Geologic Time, cont’d

Wed. Oct. 16 (Lecture) – Deformation Processes and Structures

Lab this week: Lab 4: Metamorphic Rocks & Minerals

Week 7 (Oct. 21-25)

Mon. Oct. 21 (Lecture) – The Ocean Floor and Associated Features

Wed. Oct. 23 (Lecture) – The Evolution of Plate Tectonics

Lab this week: Midterm Lab Test (Mineral and Rock identification) in first hour of lab period; Begin Lab 5: Geologic Maps and Structures in remaining lab time.

Week 8 (Oct. 28-Nov. 1)

Mon. Oct. 28 In-class Midterm Lecture Exam (NCB-114, 11:30 am- 12:20 pm)

Wed. Oct. 30 (Lecture) – The Evolution of Plate Tectonics, cont’d

Lab this week: Lab 5: Geologic Maps and Structures, cont’d

Week 9 (Nov. 4-8) *Fall Reading Week (No Classes or Labs)*

Week 10 (Nov. 11-15)

Mon. Nov. 11 (Lecture) – Isostasy and Mountain Building

Wed. Nov. 13 (Lecture) – The Evolution of Continents

Lab this week: Lab 6: Oceanic Crust & Ophiolites

Week 11 (Nov. 18-22)

Mon. Nov. 18 (Lecture) – The Evolution of Continents, cont'd

Wed. Nov. 20 (Lecture) – Mineral Resources

Lab this week: Lab 7: Active Margins

Week 12 (Nov. 25-29)

Mon. Nov. 25 (Lecture) – Mineral Resources, cont'd

Wed. Nov. 27 (Lecture) – Energy Resources

Lab this week: Lab 8: Continental Crust and Passive Margins

Week 13 (Dec. 2-6)

Mon. Dec. 2 (Lecture) – Catch-up period (to cover any important details not covered earlier)

Wed. Dec. 4 (Lecture) – Wrap up and Review, time permitting and/or question period in anticipation of December final exam.

This week's lab: Final Lab Exam (during your regularly scheduled lab period, B&GS 1053)

Final Exam: Tentative TBA (see <https://studentservices.uwo.ca/secure/Exams/>)

Accessibility Statement

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

Link to the policy on Accommodation for Students with Disabilities:

www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_disabilities.pdf

Absence Due to Illness: If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Dean's office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office

immediately. For further information please see: http://www.uwo.ca/univsec/handbook/appeals/accommodation_medical.pdf

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Records Release Form (located in the Dean's Office) for visits to Student Health Services.

Link to policy on Accommodation for Illness

www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf

(which includes a link to the [Student Medical Certificate](#))

Link to the policy on Accommodation for Religious Holidays:

www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

Statement on Academic Offences: Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Plagiarism: It is mandated by the University that the following statement on plagiarism be added to all course

outlines: "Plagiarism: Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar)." Cheating on exams (including both lecture and lab exams) will also not be tolerated.

Pertaining specifically to ES2200A lab assignments... please note that although you are encouraged to work cooperatively with your classmates in the lab periods, especially in terms of discussing aspects of geologic materials and processes, it is expected that the written answers you provide in your lab assignments will be entirely your own (obvious similarities in the wording of multiple-word answers between students may be subject to academic penalty (at the discretion of your Instructor and/or TAs)).

Comments on Exams (and Quizzes)

Online (Mastering Geology) quizzes

For the purpose of encouraging everyone to stay "on track" in learning the subject matter as it is covered, online quizzes will be completed (via Mastering Geology) by students on a weekly basis. There will be a total of approximately 10 quizzes over

the course of the term. For each of the weeks indicated above, you will complete the quiz between 11:30 am on Thursday and 11:30 am the following Thursday (deadline). Each quiz will be based on the content covered the previous week.

Midterm Lecture Exam: (regular lecture room and time (Mon. Oct. 28, NCB-114, 11:30 am-12:20 pm)

Final Lecture Exam: Date will be set by the Office of the Registrar

(see <https://studentservices.uwo.ca/secure/Exams/> for updates).

The final exam will be cumulative, but will focus more on post-midterm material.

Midterm Lab Test: Held during the first hour of your regularly scheduled lab period on week of Oct. 21-25, 2019.

Final Lab Exam: Held during your regularly scheduled lab period on week of Dec. 2-6, 2019.

Format for Midterm and Final Lecture Exams: Both exams will consist of a combination of multiple choice, fill-in-the-blanks, and short written answer (the Final Lecture Exam in December will also include questions requiring longer written answers (paragraph length). The Midterm Exam will be 50 minutes long (i.e., regular class time) and the Final Lecture Exam (date/time/room# TBA) will be 3 hours long.

Note: Your final grade for the course will be calculated as the sum of your marks for each of the components. This mark will then be rounded to the nearest integer. No marks will be awarded for arbitrary reasons, and there will be no after-the-fact changes of (e.g.) 89 to 90 %. In addition, please note that you will be judged according to your performance in this course. Marks are not awarded with reference to external requirements, like medical school entry criteria. **Please do not ask.** Statement on the use of electronic devices in exams: Unless approved by SSD (under controlled conditions), no electronic devices will be allowed in any tests or exams.

Use of cheating-analysis software: Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Attendance and Course Material Tested

Lectures: Again, attendance at the lectures is mandatory. **Downloadable Powerpoint lecture slides and accessory material will only partially cover what will be discussed in class** (and you can be guaranteed that there will be some material on the exams that, although discussed in the lectures at length, will not be explained explicitly on the slides or in the readings). So **do not treat the slide handouts as a substitute for attending lectures!**

Labs: All hand-in sheets for any given lab must be submitted directly to your assigned TA at the end of the lab period in which the topic is covered (with the exception of certain labs that will require submission at the end of the second of two lab periods) in order to be counted as being "on time" and, ultimately, to be marked by your TA. Late submissions of lab assignments will only be considered in the case of illness or other exceptional circumstances considered as a valid excuse by the Dean's Office of your Faculty or Affiliated College (as discussed below). If you are anticipating that you will be absent from a particular lab period it is up to you to make special arrangements with your assigned TA to submit the assignment to him or her beforehand. Labs not handed by the designated time will not be marked, and you will not receive grades for them. Also note that it is **very important** that you **follow the instructions provided for all lab assignments and exams in writing and as expressed by the presiding TAs. Any marks lost from not properly following the instructions provided are non-negotiable.**

In Case of Illness or Other Serious Circumstance (What to do if you Miss an Exam or a Lab Session)

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Dean's office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office immediately. For further information please see:

<http://www.uwo.ca/univsec/handbook/appeals/medical.pdf>

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Records Release Form (located in the Dean's Office) for visits to Student Health Services. The form can be found here:

https://studentservices.uwo.ca/secure/medical_document.pdf

If you do miss an exam (lecture midterm exam, midterm lab test, final lab exam or final lecture exam) due to genuine circumstances, please take appropriate documentation to the Dean's office. The counselor will contact your instructor (Dr. Tsujita) directly. **Being 'very busy' or 'I planned my vacation during that time' are not considered valid excuses.** The deadlines in this course are set well in advance and it is up to you to manage your time in a way that allows you to meet them; you are at university and your studies are assumed to be your first priority. If you miss the midterm or final exam with a valid excuse (and approved by the Dean's Office of your particular Faculty and/or Affiliated College with proper documentation), you will have the opportunity to write a make-up exam.

Statement on services for students in emotional/mental health distress: Students who are in emotional/mental distress should refer to Mental Health@Western <http://www.uwo.ca/uwocom/mentalhealth/> for a complete list of options about how to obtain help.

Other Useful Links

Link to the website for Registrarial Services: <http://www.registrar.uwo.ca>

Link to learning skills services at the Student Development Centre:

<http://www.sdc.uwo.ca>

Link to services provided by the University Students' Council:

<http://westernusc.ca/services/>

Login to Student Center (for checking final course grades): <https://student.uwo.ca/psp/heprdweb/?cmd=login>