

**Course Syllabus: Fall, 2016**

*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](mailto: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., 2016)

**Lectures: Mon. & Wed. 11:30-12:30 am; SH-3345**

**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 department policy:* Unless you have either the pre-requisites for this course or written special permission from the Dean of your Faculty (if outside the Faculty of Science) 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 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**

*Earth: An Introduction to Physical Geology, Fourth Canadian Edition* by Tarbuck, Lutgens, Tsujita, and Hicock, 2015, 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. Do not expect your Instructor or TAs to provide extra copies if you forget to print your own in time for your lab.

**Note:** Labs for this course will start on Tuesday the week of Sept. 21-25, 2016, so there will be no need for you to attend labs until your first official lab period (either Tues., Sept. 22 or Wed., Sept. 23, 2016).

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### **Grading Scheme (and significant dates)**

1) <i>Weekly Lab Assignments (20%)</i>	Due at the end of each lab session
2) <i>Midterm Lecture Exam (15%)*</i>	Monday, Oct. 17, 2016 (11:30 am, SH-3345)
3) <i>Midterm Lab Test (10 %)</i>	Tues./Wed., Oct. 25/26, 2016 (1 <sup>st</sup> hour of lab session)
3) <i>Final Lab Exam (15%)</i>	Tues./Wed., Dec. 6/7, 2016 (Regular lab time)
4) <i>Final Lecture Exam (35%)</i>	During the December exam period
6) <i>In-Class Pop Quizzes (5%)</i>	Note: if you are absent when a pop quiz is delivered (unless approved by Academic Counselling), you will not receive a mark for that quiz.

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\*Students will have the option of not counting their mid-term grade if they pass the midterm AND their grade on the final exam is at least one grade point (9%) higher than their mid-term mark. Note that the Final Lecture Exam (during the December exam period) may cover *any* of the course material presented in lectures, labs, and homework assignments.

**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 (2016)**

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). **Note also that Pop Quizzes may take place at any time during Lectures or Labs.** So it is in your best interests that you attend ALL lectures and labs.

#### **Week 1 (Sept. 12-16)**

**Mon. Sept. 12 (Lecture)** - Course Introduction and Introduction to Geology and Plate Tectonics

**Wed. Sept. 14 (Lecture)** - Minerals: The Building Blocks of Rocks

*No lab this week*

**Week 2 (Sept. 19-23) *Note: Labs start this week (B&GS Rm. 1053)***

**Mon. Sept. 19 (Lecture)** – Minerals: The Building Blocks of Rocks, cont'd

**Wed. Sept. 21 (Lecture)** – Igneous Rocks and Volcanism

***Lab this week: Lab 1: Mineral Properties & Identification***

**Week 3 (Sept. 26-30)**

**Mon. Sept. 26 (Lecture)** – Igneous Rocks and Volcanism, cont'd.

**Wed. Sept. 28 (Lecture)** – Sedimentary Rocks

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

**Week 4 (Oct. 3-7)**

**Mon. Oct. 3 (Lecture)** – Sedimentary Rocks, cont'd

***Lab this week: Lab 2: Igneous Rocks & Minerals***

**Wed. Oct. 5 (Lecture)** – Metamorphic Rocks

**Week 5 (Oct. 10-14)**

**Mon. Oct. 10** - Thanksgiving (No Lecture)

**Wed. Oct. 14** – (Lecture) – Metamorphic Rocks, cont'd

***Lab this week: Lab 3: Sedimentary Rocks & Minerals***

**Week 6 (Oct. 17-21)**

**Mon. Oct. 17** - In-class Midterm Lecture Exam (SH-3345, 11:30 am- 12:20 pm)

**Wed. Oct. 19 (Lecture)** – Geologic Maps and Geologic Time

***Lab this week: Lab 4: Metamorphic Rocks & Minerals***

**Week 7 (Oct. 24-28)**

**Mon. Oct. 24 (Lecture)** – Geologic Maps and Geologic Time, cont'd

**Wed. Oct. 26 (Lecture)** – Deformation Processes and Structures

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

**Week 8 (Oct. 31-Nov. 4)**

**Mon. Oct. 31 (Lecture)** – Deformation Processes and Structures, cont'd

**Wed. Nov. 2 (Lecture)** – The Ocean Floor and Associated Features

***Lab this week: Lab 5: Geologic Maps and Structures (cont'd)***

**Week 9 (Nov. 7-11)**

**Mon. Nov. 7 (Lecture)** – The Evolution of Plate Tectonics

**Wed. Nov. 9 (Lecture)** – The Evolution of Plate Tectonics, cont'd

***Lab this week: Lab 6: Oceanic Crust & Ophiolites***

**Week 10 (Nov. 14-18)**

**Mon. Nov. 14 (Lecture)** – Isostasy and Mountain Building

**Wed. Nov. 16 (Lecture)** – The Evolution of Continents

***Lab this week: Lab 7: Active Arcs***

**Week 11 (Nov. 21-25)**

**Mon. Nov. 21 (Lecture)** – The Evolution of Continents, cont'd

**Wed. Nov. 23 (Lecture)** – Mineral Resources

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

**Week 12 (Nov. 30-Dec. 4)**

**Mon. Nov. 30 (Lecture)** – Mineral Resources, cont'd

**Wed. Dec. 2 (Lecture)** – Energy Resources

***Lab this week: No formal lab this week; Lab 8 handed back at beginning of lab period***

**Week 13 (Dec. 7-11)**

**Mon. Dec. 7 (Lecture)** – Catch-up period (to cover any important details not covered earlier)

**Wed. Dec. 9** (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:** 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.

**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](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. The form can be found here:

<http://www.uwo.ca/univsec/handbook/appeals/medicalform.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/handbook/appeals/scholoff.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**

**Midterm Lecture Exam: (regular lecture room and time (Wed, Oct. 17, 11:30-12:20 am, SH-3345)**

**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. 24-28, 2016*.

**Final Lab Exam:** Held during your regularly schedule lab period on week of *Dec. 5-9, 2016*.

**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, or your personal need for a particular average. **Please do not ask.**

### **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 sides 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. No make-up labs will be arranged for missed labs or lab assignments handed in late. In other words, late lab assignments will not be accepted for grading, so it is important for you to show up on time at the beginning of your regularly scheduled lab. 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](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.

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### **Statements Required by the Faculty Senate**

**Prerequisites:** 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

**Exams:** "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."

**Conduct:** "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/handbook/appeals/scholoff.pdf>