

## EARTH SCIENCES 3314B SEDIMENTARY PETROLOGY

**Description:** Identification and description of various types of siliciclastic and carbonate rocks; the important characteristics of sedimentary rocks and their key sedimentary features for interpretation of present and ancient depositional environments; survey of diagenetic processes that alter original properties of primary sediments.

**Prerequisites:** Earth Sciences 2200a/b, Earth Sciences 2206a/b

**Statement on Requisites:** Unless you have either the requisites for this course or written special permission from your Academic Counsellor 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.

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**Instructor:** Carolyn Hill; [chill59@uwo.ca](mailto:chill59@uwo.ca)

**Teaching Assistants:** Slavena Galic ([sgalic@uwo.ca](mailto:sgalic@uwo.ca)), Karen Grey ([kgrey2@uwo.ca](mailto:kgrey2@uwo.ca))

**Lectures:** Monday & Wednesday 11:30-12:30, MC 105B

**Labs:** Section 002 – Wednesday 2:30-5:30, BGS 1065  
Section 003 – Monday 6:00-9:00, BGS 1065

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### LEARNING OUTCOMES

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

	<i>Achieved through:</i>
1) Compare and contrast siliciclastic rocks, carbonate rocks and common depositional environments, and think critically about the factors and processes influencing the composition and distribution of sedimentary rocks on Earth.	In-class activities, lab exercises, quizzes
2) Classify sedimentary rocks based on sedimentary structures, textures and mineralogy; identify the common sedimentary rock-forming minerals in thin section and recognize distinct fossil grains and relate them to specific marine environments.	Lab exercises, in-class activities
3) Summarize and demonstrate familiarity with one depositional environment, and identify and apply high-quality references in order to effectively communicate ideas to peers.	Oral presentation
4) Explain how sedimentary rocks contain crucial information concerning past climatic and surficial conditions on Earth.	In-class activities, quizzes, lab exercises, oral presentation

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## LECTURE TOPICS

Introduction to sedimentary rocks

Siliciclastic rocks: textures, fluid flow, sedimentary structures

Siliciclastic rocks: classification, provenance, tectonic setting, depositional environments, chemical weathering, diagenesis

Carbonate rocks: composition and classification, depositional environments, diagenesis

Evaporites, sulphates, BIF, chert, Earth's atmosphere and sedimentary deposits, mineral deposits and other sedimentary rocks

## LABORATORY (One session = 3 hours)

Sessions	Topics
4	Composition and classification of siliciclastic rocks
4	Composition and classification of carbonate rocks
2	Composition and classification of other sedimentary rocks
2	Oral presentations

## COURSE MATERIALS

Any sedimentology textbook can be used as a resource, but none are required.

## METHODS OF EVALUATION

Mid-term exam, 1 hour in-class (February 14<sup>th</sup>): 15%

Lecture-based Final exam, 2 hours (date TBA): 35%

Quizzes (online): 10%

Oral presentation: 15%

Lab assignments: 25%

**PLEASE NOTE:** All lab assignments must be completed during each laboratory session. One lab assignment may be missed during the term, or the student may opt to remove their lowest lab assignment score from the total at the end of term. One quiz may be missed during the term, or the student may opt to remove their lowest quiz score from the total at the end of term.

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## UNIVERSITY POLICIES

**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: [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf).

**Plagiarism** is a serious academic offence. The UWO Senate Academic Handbook defines plagiarism as "The act of appropriating the literary composition of another, or parts or passages of his writings, or the ideas or language of the same, and passing them off as the product of one's own mind." Students must write their assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using proper referencing, such as citations. For more information see Scholastic Offence Policy in the Western Academic Calendar.

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 Academic Counselling 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 Academic Counselling Office immediately. For further information please see: [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_illness.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.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 Academic Counselling Office) for visits to Student Health Services. The form can be found here: [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf).

### **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.

### **Support Services**

Students who are in emotional or mental distress should refer to Mental Health@Western [http://uwo.ca/health/mental\\_wellbeing/](http://uwo.ca/health/mental_wellbeing/) for a complete list of options about how to obtain help.

Registrarial services are available at <http://www.registrar.uwo.ca/>.

Student Support services are listed at [http://accessibility.uwo.ca/resources/support\\_services.html](http://accessibility.uwo.ca/resources/support_services.html), <http://www.sdc.uwo.ca/> and <http://westernusc.ca/services/>. Please also see the list of resources on the course OWL page on the "Beyond the Course" page.