

EARTH SCIENCES 3314B SEDIMENTARY PETROLOGY

Winter 2019

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.

Instructor: Carolyn Hill; chill59@uwo.ca

Office Hours: By appointment (see course policies below)

Teaching Assistant: Karen Grey; kgrey2@uwo.ca

Lectures: Monday & Wednesday 11:30-12:30 pm, UCC 58

Labs: Section 002 – Wednesday 2:30-5:30 pm, BGS 1065

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) Explain how sedimentary rocks contain crucial information concerning past climatic and surficial conditions on Earth.	In-class activities, quizzes, lab exercises
4) Demonstrate familiarity with and reflect on issues involving sedimentary deposits; give and receive constructive peer feedback.	Online assignments, in-class activities

LECTURE TOPICS INCLUDE:

Introduction to sedimentary rocks

Siliciclastic rocks: fluid flow, textures, sedimentary structures, classification, provenance, tectonic setting, depositional environments, chemical weathering, diagenesis.

Carbonate rocks: composition and classification, depositional environments, diagenesis.

Evaporites, BIF, Earth's atmosphere and sedimentary deposits.

COURSE MATERIALS

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

METHODS OF EVALUATION

- 1) Midterm exam, 50 min. in-class (February 13th): **15%**
- 2) Final exam, 2 hours (date TBA): **35%**
- 3) Lab assignments (weekly): **26%**
- 4) Online assignments (through OWL): **24%**
 - Quizzes (8%): four quizzes will be posted throughout the semester.
 - Forum post (12%): due in March, instructions will be given in class.
 - One-minute papers (4%): briefly reflect on course-related concepts or questions at the beginning and end of the semester.

PLEASE NOTE: Lab assignments are due at the end of each laboratory session (one session = 3 hours). 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. A calculator is required for some labs.

COURSE POLICIES

- 1) I do not hold weekly office hours, but I will aim to be present at the beginning of every lab session and am available to meet on an appointment basis. Email is the best way to contact me. Please include the course code in the subject line of your email(s). You should receive a prompt reply (same or following day), except on weekends, where you can expect a response the following Monday.
 - 2) **Late assignment policy:** late assignments and labs without academic accommodation or other official arrangement are subject to a 10% penalty for each day late, with a maximum of 2 days late for credit.
 - 3) If you have any problems following the course material, please don't hesitate to talk to me or Karen to help clarify the material/concept. If you need extra help or have questions, please say so before it becomes a larger problem later in the semester. We are here to help and will be happy to talk to you!
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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.

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.

Student responsibilities in the event of a **medical issue:**

If you are unable to meet a course requirement due to **illness** or other serious circumstances, you must *first* 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.

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.

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 (519) 661-2147 or ssd@uwo.ca, or visit them in person in Rm 4111 of the Western Student Services Building for any specific question regarding an accommodation. For further information please see: www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_disabilities.pdf

Support Services

Students who are in emotional or mental distress should refer to Mental Health@Western http://uwo.ca/health/mental_wellbeing/ for a complete list of options about how to obtain help. Other student support services are found at: http://accessibility.uwo.ca/resources/support_services.html, <http://www.sdc.uwo.ca/> and <http://westernusc.ca/services/>.

A list of resources is also posted on the course OWL page under the "Beyond the Course" tab.