

## EARTH SCIENCES 3314B SEDIMENTARY PETROLOGY

**Description:** Identification and description of various types of siliciclastic and carbonate rocks; sedimentary textures and geochemical compositions; sedimentary structures and depositional environments; diagenetic and weathering 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 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.

**Instructor:** Dr. P.L. Corcoran; BGS 0164; Email: [pcorcor@uwo.ca](mailto:pcorcor@uwo.ca)

**Lecture Schedule:** 11:30-12:30 Monday and Wednesday MC 105B

**Laboratory:** Monday 6:00-9:00 pm BGS 1065; Wednesday 2:30-5:30 BGS 1065

---

### COURSE SYLLABUS

#### LECTURES: 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 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 (date TBA): 15%

Final exam 2 hours (date TBA): 35%

Quizzes: (Posted on OWL) 10%

Oral presentation: 15%

Lab assignments: 25% (All lab assignments must be completed during each laboratory session. One lab assignment may be missed during the term, or a student may opt to remove their lowest lab assignment score from the total at the end of term.)

## **LEARNING OUTCOMES:**

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

1. Classify sedimentary rocks based on sedimentary structures, textures and mineralogy.
2. Identify the common sedimentary rock-forming minerals in thin section based on weekly lab assignments.
3. Describe how the composition of a sedimentary rock is controlled by tectonic, climatic, and depositional processes at the time of deposition.
4. Recognize distinct fossil grains and relate them to specific marine environments and conditions based on weekly lab assignments.
5. Explain how sedimentary rocks contain crucial information concerning past climatic and surficial conditions on Earth.

**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](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf).

**Use of plagiarism-checking software** All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com> ).

**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.

**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.

**Link to policy on Accommodation for Illness** (includes link to the Student Medical Certificate)

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_illness.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.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.

**Link to the policy on Accommodation for Students with Disabilities**

[www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_disabilities.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_disabilities.pdf)

**Link to the policy on Accommodation for Religious Holidays**

[www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_religious.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf)