** ENVS\*3180 Sedimentary environments (0.5 credits)**

**Academic Department: School of Environmental Sciences**

**Campus: Guelph**

**Semester Offering: Fall 2017**

**Course Description**

This course examines the principles of sedimentology and stratigraphy as applied to various ancient and modern sedimentary systems. Students will learn to describe and interpret sedimentary deposits in terrestrial and marine systems as well as the larger forces that control the preservation and evolution of these sedimentary systems over geological time. The course includes several field trips.

**Prerequisites** ENVS\*1050 or ENVS\*2240

**Restriction(s)** ENVS\*2400

**Class schedule and location**

Lecture M, W, F 13:30-14:20 ROZH 107

Lab M 14:30-17:20 ALEX 024

## Instructor

Instructor: Galina Morozova; gmorozov@uoguelph.ca; office 103 ALEX; office hours W 15:00-16:00 or by appointment.

**Course materials**

*Textbook:* Nichols, G. 2009. Sedimentology and Stratigraphy. 2nd ed. Oxford: Wiley Blakwell, 419 pp. Will be available on reserve in the library.

All other course materials including lecture presentations, study guides for lecture quizzes and lab exam, marks, etc. will be posted on CourseLink. Lecture notes will be posted on CourseLink AFTER the discussion of each topic is completed in class. Lecture notes WILL NOT be posted in advance.

**Course content**

***Specific learning outcomes***In this course, students will:

1. Learn to describe and identify sedimentary deposits and rocks using standard terminology and procedures.
2. Learn to interpret sedimentary deposits and rocks in the field.
3. Learn laboratory methods commonly used to study sedimentary deposits and rocks.
4. Learn to differentiate environments and facies and interpret the origin of sedimentary deposits based on their composition, texture, structures, fossils, stratigraphic relationships, etc.
5. Learn to create a depositional model and reconstruct sedimentary basin history.

### *Course Assignments and Tests*

### *Three lecture quizzes*

Each lecture quiz will include multiple choice, short answer, draw/label picture and essay questions. The topics covered by lecture quizzes are listed below in tentative course schedule. Study guide will be provided one week before each lecture quiz.

*Final exam*

None

*Labs and lab exam*

This course includes seven labs. Labs will consist of in-class exercises and short fieldtrips.

There is no lab book, labs will be handed in class or posted on CourseLink. Lab exam at the end of the semester will include practical questions from all labs. Study guide will be provided one week before lab exam.

*All-day fieldtrip*

There will be one all-day *mandatory* fieldtrip on Saturday, November 11. Transportation for all fieldtrips will be provided (university van or school bus). All fieldtrips will take place *regardless* of weather conditions.

*Movie quizzes*

Each movie will be accompanied by a short quiz (available on CourseLink or handed in class). Due dates for at-home movie quizzes are TBA. In-class movie quizes are due at the end of the class.

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***Mark allocations and learning outcomes***

| Assignment or Test | Due Dates | Contribution to Final Mark (%) | Learning Outcomes Assessed |
| --- | --- | --- | --- |
| Lecture quizzes 1and 2 | Oct 6 and Nov 13 | 40% total | 1-5 |
| Lecture quiz 3 | Dec 1 | 10% | 1-5 |
| Labs | See schedule below | 25% | 2, 3, 4 |
| Lab Exam | Nov 20 | 10% | 2, 3 |
| All-day fieldtrip report | Nov 24 | 10% | 2, 4 |
| Movie quizzes | TBA | 5% | 1-5 |

***Tentative course schedule***

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| --- | --- | --- | --- | --- |
|  | **Monday Lecture** | **Wednesday Lecture** | **Friday Lecture** | **Lab** |
| **Week 1**(Sept 3-8) |  |  | Sedimentary environments, sedimentology, stratigraphy(Ch. 1) |  |
| **Week 2**(Sept 11-15) | Classification of sediments and sedimentary rocks(Ch. 2, 3) | Classification of sediments and sedimentary rocks(Ch. 2, 3) | Sources of sediment(Ch. 6) | None |
| **Week 3**(Sept 18-22) | Sediment transport and sedimentary structures (Ch. 4) | Sediment transport and sedimentary structures (Ch. 4) | Glacial environments(Ch. 7) | Lab 1. Clastic sedimentary rocks,rock textures |
| **Week 4**(Sept 25-29) | Glacial environments(Ch. 7) | Glacial environments(Ch. 7) | Aeolian environments (Ch. 8) | *Lab 2.* Biochemical sedimentary rocks*Lab 1 due* |
| **Week 5**(Oct 2-6) | Rivers and alluvial fans (Ch. 9) | Rivers and alluvial fans (Ch. 9) | **Lecture quiz 1****(Ch. 1, 2, 3, 4, 6, 7, 8)** | *Lab 3.* Sediment transport and sedimentary structures *Lab 2 due* |
| **Week 6**(Oct 9-13) | ***Thanksgiving holiday, no lecture, class re-scheduled for Dec 1*** | Lakes (Ch. 10) | Lakes (Ch. 10) | ***Thanksgiving holiday, no lab*** |
| **Week 7**(Oct 16-20) | Deltas (Ch.12) | Deltas (Ch. 12) | An overview of marine environment (Ch. 11) | *Lab 4.* Streams and stream valleys *Lab 3 due* |
| **Week 8**(Oct 23-27) | An overview of marine environment (Ch. 11) | An overview of marine environment (Ch. 11) | Clastic coasts (Ch. 13) | Lab 5. Lacustrine environments(Ch. 7)*Lab 4 due* |
| **Week 9**(Oct 30-Nov 3)\* | Clastic coasts (Ch. 13) | Shallow marine environments(Ch. 14, 15) | Shallow marine environments(Ch. 14, 15) | Lab 6. Marine environments*Lab 5 due* |
| **Week 10**(Nov 6-10)*Fieldtrip on Saturday, Nov* *11* | Deep marine environments (Ch. 16) | Deep marine environments (Ch. 16) | Principles of stratigraphy, dating,correlation (Ch. 19, 21) | Lab 7. Sedimentary basins**,** depositional environments and facies *Lab 6 due* |
| **Week 11**(Nov 13-17) | **Lecture quiz 2****(Ch. 9, 10, 11, 12, 13, 14, 15, 16)** | Principles of stratigraphy, dating,correlation (Ch. 19, 21) | Principles of stratigraphy, dating,correlation (Ch. 19, 21) | *Lab 7 due* |
| **Week 12**(Nov 20-24) | Sea-level change and sequence stratigraphy (Ch. 23) | Sea-level change and sequence stratigraphy (Ch. 23) | Sedimentary basins (Ch. 24)***Fieltrip report due*** | *Lab Exam*  |
| **Week 13**(Nov 27-Dec 1) | Sedimentary basins (Ch. 24) | Sedimentary basins (Ch. 24) | **Lecture quiz 3****(Ch. 19, 21, 23, 24)** | None |

*\* Last day to withdraw from this course is Nov 3.*

**Course policies**

## *Communication*

## students *are required* to check their e-mail on a regular basis; all important messages will be sent from CourseLink;

## student e-mails received before 18:00 Monday-Friday will be answered the same day;

##  you can expect evening and weekend & holiday messages to be answered the next business day (except for emergencies).

***Missing and late assignments***Students will be allowed to make up assignments/tests, return late assignmentsand missall-day fieldtrip *only* in case of:

* illness proven by doctor or hospital note; or
* playing sports for the University of Guelph (confirmed by team coach & supervisor); or
* extreme family emergencies (going on vacation is excluded!).

In all other cases, ‘*0’ mark will be given for a missing assignment & quiz & fieldtrip.* If you miss all-day fieldtrip because of valid excuse, you will have to write a 10-page paper (10% of the final mark).

***Group Work*** Group work is encouraged when completing labs and fieldtrips. However, students *have to take their own notes and write their own lab & field reports. Submitting identical reports will result in 50% mark reduction for the report!*

***Copies of graded and out-of-class assignments*** Keep paper and/or other reliable electronic copies of all graded and out-of-class assignments: you may be asked to resubmit work at any time.

### *Policy regarding use of electronic devices and recording of lectures* Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the written permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Phones and laptops are distractions not just for the people using them, but for others sharing the same space. A recent study showed that students attempting to multi-task using laptops in the classroom did much worse than peers using pencil and paper to take notes. Even worse, students sitting next to the multi-taskers also suffered significantly ("Students' use of laptops in class lowers grades: Canadian study". Globe and Mail, August 14, 2013).

The use of cell phones, including texting and checking messages, is prohibited during class time. Please leave the room if you need to use your phone. Laptops are essential for some students to take notes, but they can create a distracting space within the classroom. You may use your computer for notetaking; you may not use it for any other purpose during class time as there will be no need to access the Internet.

## University Policies

### *Academic Consideration*: the University of Guelph is committed to supporting students in their learning experiences and responding to their individual needs and is aware that a variety of situations or events beyond the student's control may affect academic performance. Support is provided to accommodate academic needs in the face of personal difficulties or unforeseen events in the form of Academic Consideration.

Information on regulations and procedures for Academic Consideration, Appeals and Petitions, including categories, grounds, timelines and appeals can be found in [Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar](https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml).

### *Academic Misconduct*: the University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Detailed information regarding the Academic Misconduct policy is available in [Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar](https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml).

### *Accessibility*: the University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Student Accessibility Services (SAS), formerly Centre for Students with Disabilities (CSD), as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email sas@uoguelph.ca or visit the [Student Accessibility Services website (http://www.uoguelph.ca/csd/)](http://www.uoguelph.ca/csd/).

### *Course Evaluation Information*: end of semester course and instructor evaluations provide students the opportunity to have their comments and opinions used as an important component in the Faculty Tenure and Promotion process, and as valuable feedback to help instructors enhance the quality of their teaching effectiveness and course delivery.

While many course evaluations are conducted in class others are now conducted online. Please refer to the [Course and Instructor Evaluation Website](https://courseeval.uoguelph.ca/) **for more information.**

***Drop period*:** the drop period for single semester courses starts at the beginning of the add period and extends to the Fortieth (40th) class day of the current semester (the last date to drop a single semester courses without academic penalty) which is listed in [Section III (Schedule of Dates) of the Undergraduate Calendar](https://www.uoguelph.ca/registrar/calendars/).

The drop period for two semester courses starts at the beginning of the add period in the first semester and extends to the last day of the add period in the second semester.

Information about Dropping Courses can be found in [Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar](https://www.uoguelph.ca/registrar/calendars/undergraduate/current/).

## Commitment to the course

This course is worth 0.5 credits. According to University policy, you should plan on spending up to 12 hours per week engaged with this course, including lectures and labs. That leaves around 6 hours for study outside of class meetings. If you have invested this amount of time and still feel like you're struggling to keep up, please make an appointment to see me.

**HAVE A GREAT SEMESTER!**

