ENVS*2240 FUNDAMENTALS OF ENVIRONMENTAL GEOLOGY (0.5 credits)

Academic Department: School of Environmental Sciences
Campus: Guelph
Semester Offering: Fall 2023

Course Description
This course introduces the concepts and real-world examples of environmental issues related to plate tectonics, natural resources and igneous, metamorphic and sedimentary processes and rocks, groundwater and structural geology. Students will develop laboratory skills in rock and mineral identification, geological map interpretation and site characterization.

Prerequisites
GEOG*1300 or ENVS*1040

Restriction(s)
ENVS*1050

Class schedule and location
Lecture: Monday & Wednesday 9:30-10:20 MACS209
Labs: Monday 19:00-21:50; Tuesday 11:30-14:20; Thursday 8:30-11:20; Friday 9:00-11:50 ALEX 024

Teaching team
Instructor: Dr. Galina S Morozova
Email: gmorozov@uoguelph.ca
Telephone: (519)-824-4120 x53393
Office: Alex 221
Office hours: in person or via Zoom (day & time TBA). Students also may drop in to my office any time during business hours (Monday-Friday, 8:30 am-4:30 pm). You need to email me at least one day in advance to arrange time if you plan to come outside scheduled office hours.

Graduate Teaching Assistants:
Jesse Brown, jbrown72@uoguelph.ca
Emily Bowyer, ebowyer@uoguelph.ca
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Lab coordinator: Alyson Brown
Email: alysonb@uoguelph.ca
Telephone: (519)-824-4120 x53393
Office: Alex 221

Course materials
Textbook: Nance, D. and Murphy, B. (3rd edition, 2015). Physical Geology Today. Oxford University Press, 752 pp. ISBN#0199965552. The textbook will be available on reserve in the library.

Laboratory manual: Fundamentals of Environmental Geology, University of Guelph (cost ~30$).

All other course materials including lecture notes, study guides for quizzes and exams, marks, etc. will be posted on CourseLink. Please, keep in mind that lectures will be streamed via Zoom during lecture time

BUT Zoom files WILL NOT be posted on CourseLink. Lecture notes (as .pdf files) 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 about basic principles of geology.
2. Learn about the materials that make up the Earth as well as geological processes that are responsible for the nature and form of the Earth's surface.
3. Learn about the geology and environmental hazards in different parts of the world including Canada and Ontario.
4. Learn to identify common minerals, rocks and fossils in the field and in the lab.
5. Learn how to use topographic and geologic maps.
6. Learn how to record field observations and compile a report.

Course Assignments and Tests

Two lecture quizzes

Each lecture quiz will include multiple choice, true/false, short answer, draw/label picture 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

Final exam will include questions (multiple choice, true/false, short answer, draw/label picture) from lecture quizzes 1 & 2 and new questions about the material covered during the whole semester. Study guide will be provided one week before the final exam.

Labs, lab quiz and lab exam

This course has eight labs. Short lab quiz will include practical questions from labs 1-4, lab exam will cover all labs.

All-day fieldtrip

There will be one all-day ***mandatory*** fieldtrip on Saturday, October 28 (~9:00-18:00). Transportation (school bus) for the fieldtrip will be provided. You may be required to pay a small fee. Fieldtrip will take place *regardless* of weather conditions. Instructions for the fieldtrip report will be posted on CourseLink.

Movie quizzes

We are going to watch several movies, most of them at home. All movies will be accompanied by a short quiz (will be available on CourseLink). Quizzes must be sent by email to GTAs or handed in class. Due dates for at-home movie quizzes are to be determined.

Mark allocations and learning outcomes

Assignment or Test	Due Dates	Contribution to Final Mark (%)	Learning Outcomes Assessed
Lecture Quizzes 1and 2	Oct 23 and Nov 20	30% total (15% each)	1-3
Final Exam	TBA	20%	1-3
Lab Quiz	Week 8	10%	4, 5
Lab Exam	Week 12	20%	4, 5
Fieldtrip report	Nov 11	15%	4, 6

Assignment or Test	Due Dates	Contribution to Final Mark (%)	Learning Outcomes Assessed
Movie quizzes	TBA	5%	1-3

We DO NOT drop any grades.

Tentative course schedule

	Monday Lecture	**Wednesday Lecture**	**Lab (M,T, Th, F)**
Week 1 (Sept 7-8)	*No lecture*	*No lecture*	*No lab*
Week 2 (Sept 11-15)	Introduction (Ch.1)	Minerals (Ch. 3)	*No lab*
Week 3 (Sept 18-22)	Rock classification (lecture notes)	Rock classification (lecture notes)	Topographic maps
Week 4 (Sept 25-Sept 29)	Earth's Interior (Ch.11)	Plate Tectonics (Ch.2)	Minerals (Ch. 3)
Week 5 (Oct 2-6)	Plate boundaries, mountains, earthquakes and volcanoes (Ch. 9, 10, 11)	Plate boundaries, mountains, earthquakes and volcanoes (Ch. 9, 10, 11)	Igneous Rocks (Ch. 4)
Week 6 (Oct 9-13)	***Thanksgiving holiday, no class, class re-scheduled for Dec 1***	Plate boundaries, mountains, earthquakes and volcanoes (Ch. 9, 10, 11)	*No lab*
Week 7 (Oct 16-20)	Streams and floods (Ch. 13)	Streams and floods (Ch. 13)	Clastic sediments and rocks (Ch. 6)
Week 8 (Oct 23-27) **Fieldtrip on Saturday, Oct 28**	**Lecture quiz 1** (in class)	Glaciers, glaciations, permafrost (Ch. 15)	***Lab Quiz*** Chemical and biochemical sediments and rocks (Ch. 6)
Week 9 (Oct 30-Nov 3)	Glaciers, glaciations, permafrost (Ch. 15)	Groundwater (Ch. 14)	Fossils
Week 10 (Nov 6-10)	Weathering and soils (Ch.5)	Mass wasting (Ch. 12)	Metamorphic rocks (Ch. 7)
Week 11 (Nov 13-17)	Coasts and coastal hazards (Ch. 17) ***Fieldtrip report due before lecture***	Coasts and coastal hazards (Ch. 17)	Geologic maps and structures (Ch. 10)
Week 12 (Nov 20-24)	**Lecture quiz 2** (in class)	Extraterrestrial impacts (lecture notes)	***Lab Exam***
Week 13 (Nov 27-Dec 1)	Geological resources (Ch. 18, 19)	Geologic history of Canada and Ontario (lecture notes) *Friday:* Climate and environmental change (Ch. 20)**	*No lab*

**Class re-scheduled from Monday, Oct 9

Final Exam: in-class (date, time & room *TBA)*

Course policies

Communication

- students *are required* to check their e-mail every day (preferably, several times a day); all important messages will be sent from CourseLink and/or posted in Announcements;
- student e-mails received before 16:30 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 are allowed to make up tests & fieldtrip report and submit late assignments **only** in case of:

- illness/medical emergency (proven by a doctor' or hospital' note);
  or
- playing sports for the University of Guelph (confirmed by email from team coach & supervisor);
  or
- extreme family emergencies (going on vacation is excluded!).

If you miss all-day fieldtrip because of valid excuse (see above), you will have to write a 10-page research paper (15% of your final mark). The '0' mark will be entered for the missed movie quiz & test & fieldtrip if there is no valid excuse.

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 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.

***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.

***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/).

***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 **for more information.**

***Drop period*:** information about Dropping Courses can be found in Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar.

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 7 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 and/or GTAs.

HAVE A GREAT SEMESTER!