 

## General Information

**Course Code:** ENVS\*2240

**Course Title:** Fundamentals of Environmental Geology

**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.

**Credit Weight: 0.5**

**Academic Department (or campus): School of Environmental Sciences**

**Campus: Guelph**

**Semester Offering: Fall 2016**

**Class Schedule and Location:**

Lectures: T/TH 8:30 in ALEX 218

Labs: T 2:30-5:20 **OR** W 11:30-2:20

## Instructor Information

Instructor Name: Emmanuelle Arnaud

Instructor Email: [earnaud@uoguelph.ca](mailto:earnaud@uoguelph.ca)

Instructor Phone and Extension: (519) 824-4120, xt 58087

Office location and office hours: ALEX Room 126, by appointment via email

## GTA Information

GTA Name: Tara Harvey

GTA Email: tharvey@uoguelph.ca

GTA office location and office hours: ALEX 125, office hours TBD (see courselink post)

## Course Content

### Specific Learning Outcomes:

Upon completing this course, students will:

1. Name and identify major rock types and minerals, and describe their genesis and basic physical properties.
2. Describe various plate tectonic settings, and explain how this determines the distribution and properties of rocks and resources as well as the nature of seismic hazards.
3. Explain how rocks are deformed over time and how this impacts the 3D distribution of rocks in various settings
4. Characterize various sites Canada in terms of their geological composition and history.
5. Identify and explain properties of geological substrates that impact groundwater quality.
6. Interpret and use various geological maps from different settings
7. Integrate various geological information (rock types, deformation histories, glacial history, tectonic setting and maps) to create a geological site conceptual model for a site to be used in environmental applications.

### Lecture Content:

|  |  |  |
| --- | --- | --- |
| **Week of** | **TOPICS** | **LAB SCHEDULE** |
| Sept 8 | Introduction to Geology | No lab this week |
| Sept 13/15 | Plate tectonics | Topographic maps |
| Sept 20/22 | Minerals | Minerals |
| Sept 27/29 | Igneous rocks | Igneous rocks |
| Oct 4/6 | Igneous rocks | Lab quiz 1; Clastic sediments & rocks |
| Oct 13 | Sediments & Sedimentary rocks | No class Tuesday No lab this week ; \*\*FIELD TRIP SATURDAY OCT 15 |
| Oct 18/20 | Chemical & biochemical rocks | **Fossils** |
| Oct 25/27 | fossils  **MIDTERM TEST- Oct 27** | No lab this week |
| Nov 1/3 | Metamorphic rocks | Carbonate rocks |
| Nov 8/10 | Geologic structure and maps | Metamorphic rocks |
| Nov 15/17 | Groundwater & geology | Lab Quiz 2; Geological maps |
| Nov 22/24 | Geological history of Canada | **LAB EXAM** |
| Nov 29/Dec 1 | Review |  |

*Note: this is only meant as a guideline. Lecture schedule may be modified during the term.*

### Course Assignments and Tests:

| **Assignment or Test** | **Due Date** | **Contribution to Final Mark (%)** | **Learning Outcomes Assessed** |
| --- | --- | --- | --- |
| GeoOnline assignment | Nov 10 | 20 | B, C, D, F, G |
| Lab quizzes | Oct, 4/5; Nov 15/16 | 10 | A |
| Lab Exam | Nov 22/23 | 20 | A, C, E, F, G |
| Midterm exam | Oct 27 | 20 | A-E |
| Final Exam | Dec 13, 7-9pm | 30 | A-E |

### Final examination date and time: December 13, 2016; 7-9 pm

### Final exam weighting: 30%

## Course Resources

### Recommended Texts:

Nance, D. and Murphy, B. 2016. Physical Geology Today. Oxford University Press, New York, 752 pp. Strongly recommended. Available at the bookstore, on reserve and in EBOOK format. See the link in courselink to purchase the EBOOK at <https://www.vitalsource.com/>.

### Lab Manual:

Purchase (20$) in first lab)

### Other Resources:

Check the **course D2L website** for additional in-course resources and information. Login with your email login and password at <http://courselink.uoguelph.ca/index.html>

The textbook also has online content at (see link in courselink): <http://global.oup.com/us/companion.websites/9780199965557/student/>

### Field Trips:

OCT 15th. Hamilton. A small fee will be collected the week before the trip to offset the cost of transportation.

### Additional Costs:

Lab manual will be 20$

## Course Policies

### Grading Policies:

All assignments are to be submitted through Dropbox on the D2L course website by the due date (please check the schedule posted on the D2L site for your due date). If you cannot meet a course requirement, let me know by email as soon as possible and preferably before the due date. Late assignment will be penalized 10% per day and will no longer be accepted a week after the due date.

\*Please note that these policies are binding unless academic consideration is given to an individual student.

### Course Policy on Group Work:

Group work is encouraged when completing in class labs though students will have to write individual lab tests making it essential that individuals complete their own labs throughout the course.

### Course Policy regarding use of electronic devices and recording of lectures:

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

## 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/c08/c08-drop.shtml).

## Additional Course Information

**Course expectations:**

All students are expected to attend lectures and read the assigned chapters before class. ***The course notes will NOT be posted on the D2L course website.*** It is the responsibility of the student to obtain class notes if they miss a lecture. Attendance at all labs is mandatory. It is the responsibility of the student to contact their lab TA if any labs are missed. All students should check the D2L website regularly for additional course materials and notices regarding exams and labs. Students will be able to access their marks on the D2L course website.

**Learning and Writing Resources for Students at the Library**

The Library and Learning Commons offer free services to help you succeed at the University of Guelph.  You can:

- meet with a Peer Helper to talk about study strategies or your writing assignments - attend Supported Learning Groups (SLGs) and study sessions - get assistance finding journal articles and books - register for academic workshops  - lots more!

Visit the Library website for more information: [www.lib.uoguelph.ca/get-assistance](http://www.lib.uoguelph.ca/get-assistance)