

GL9701A Structural Economic Geology in Mineral Exploration

Format: Short-course style

Dates: October 27-31, 9:00-12:00 and 1:00-5:00 each day

Location: to be determined

Enrolment: capped at 18 students

Text: There is no text but the instructor will distribute course notes. These must be purchased by all students.

Professor: Dr. Rogerio Monteiro, rogerio.monteiro@vektore.com

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Dept. of Earth Sciences – University of Western Ontario

Prerequisites: Graduate students with undergraduate courses in structural geology and mapping. 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.

This is a 40-hour course, condensed in the week of October 27-31 (note the last 2 days are the fall break period). The core objective of this course is to introduce and upskill the students with modern concepts and tools used in mineral exploration from the structural geology perspective. The course will include multimedia presentations, concept building, best practices, case studies and practical exercises. The scope of Structural Economic Geology will be presented along with basic and advanced principles of mineral exploration and structural geology. Concepts of best practices will be discussed throughout the course. The course will also explore and develop students' skills on industry-based and proprietary methods that are critical for structural exploration. Students are required to bring a laptop to the course.

Syllabus

Monday (day 1)

1. Introduction
2. Tools and Methods
3. Structural Exploration and Mineral Exploration
4. Exercises and Q&A of the day's material

Tuesday (day 2)

1. Structural Elements
2. Fold Geometry and Asymmetries
3. Fault Geometry and Asymmetries
4. Joint Mapping and Frequency
5. Vein Mapping and Frequency
6. Exercise and Q&A of the day's material
7. First test

Wednesday (day 3)

1. Outcrop Analysis and Oriented Samples
2. Structural Analysis in Boreholes

3. Methods to Extract Structural Data from Core
4. The V-SET© Method and vKore-Structure software (trail copies will be distributed in class and will be run on students' personal laptops)
5. Exercises and Q&A of the day's material

Thursday (day 4)

1. Working with Borehole Images and drill core
2. Second test

Friday (day 5)

1. Working with Borehole Images and drill core
2. Q&A of the course
3. Take home exam distributed

During the tests and final exam students will be tested for their capacity of:

1. working and visualizing geological objects in 2D and 3D;
2. assessing geological exploration targets;
3. resolving practical exercises that will involve rock samples, geological maps and mineral exploration tasks

Course materials (supplied by the student)

- drafting tools; computer with office-related software installed for writing assignments
- It is not mandatory, but it is advised that the students have a structural geology textbook

Method of Evaluation

Students will be evaluated based on the following items:

- Two 1 hr in-class tests (25% each);
- Take home final exam worth 50% of the final mark. The final exam will be distributed at the end of the course and must be upload to the OWL course web site by 3 pm on November 5, 2014. Students must complete the exam independently and answers 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>)."

Non-medical absences are not permitted unless determined to valid by the Dean's office. For medical-related absences the prospective students should consult the Policy on Accommodation for Medical Illness (<https://studentservices.uwo.ca/secure/index.cfm>). Documentation related to either medical or non-medical academic accommodation, must be submitted by the student directly to the appropriate Faculty Dean's office and not to the instructor. It will be the Dean's office that will determine if accommodation is warranted. In cases where absences are justified and accepted by the Dean's office, the instructor will work together with the student to best address the situation. However, only a maximum of two days absence can be accommodated, given the short course format of the course.

Additional Statements

Statement of Use of Electronic Devices

For the in-class tests students may use their computers and calculators during exams and tests but computers must be on airplane mode. Use of cell phone is forbidden.

Statement of 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.

Support Services

Students should visit Registrarial Services (<http://www.registrar.uwo.ca>) and USC Student Support Services (<http://westernusc.ca/services/>) for their support services. In addition, 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.