

Geology 9702B

Best Practices in Sustainable Mineral Resource Development in Ontario

Dates: January 24th to April 4th, 2017

Hours: Tuesday evening classes from 3:00 to 7:00 pm

Location: to be determined

Text: instructor to distribute course notes

Professor: Dave Good, PhD, P.Geo.

W.S. Fyfe Chair

Dept. of Earth Sciences – Western University

Email: dgood3@UWO.ca

Prerequisites

This program is available to registered 4th year undergraduates and graduate students from any Faculty. Topics covered are not typically available in any faculty and are presented at an introductory to intermediate level.

The core objective of this course is to introduce or up skill students in the practical and multi-disciplinary nature of many aspects related to mineral resource development. The course is subdivided into modules that focus on the inter-dependencies between various disciplines including Geology, Engineering, Law, Environment, Geography and Business. The scope of the course will include industry-based practices for the mining cycle such as exploration and deposit assessment, environmental base line and mitigation studies, First Nations consultation, government permitting process, and post mining land reclamation.

The course is focussed on the mining sector in Ontario, but concepts and principles are applicable to other resource types and jurisdictions. Professionals are invited to attend as they bring a broad range of experience that will enhance classroom discussions. The course will include multimedia presentations, concept building, best practices, case studies and practical exercises. Concepts of best practices will be discussed throughout the course.

Syllabus

Note that some of the material might vary depending on availability of guest speakers.

Module 1- Mineral Exploration:

- Introduction to the course
- Importance of Safety in exploration and mining
- Interaction with Government agencies (MNR and MNDM) in relation to historical data, claim staking and land management
- Data representation (2d and 3d) and Global Positioning System
- The Assay - Analytical techniques and data management
- Geophysical and geochemical surveys
- Trenching and diamond drilling

Module 2- First Nations Engagement:

- Framework of the consultations process
- Engagement: terminology, initiation, facilitation, agreements, examples of successes and failures.

Module 3: Resource Estimation and Economic Assessment

- The 43-101 standard
- Resource estimation process
- Assessing economic viability of a deposit
- Raising capital from a junior mining company's perspective

Module 4: Mining and the Environment

- Inter-relationships between geology, mineral resource, bedrock, topography, ground water and waste rock
- Introduction to waste rock and tailings management and remediation

Module 5: Environmental Assessment Studies

- Environmental Assessment and the permitting process from exploration to mining
- Practical side of working with government agencies regarding property access and permits for exploration and resource development
- Biological inventory field studies and mitigation strategies

Module 6: Student Presentations

- Student presentations in an informal setting

Method of Evaluation

- Evaluation will be based on class participation, 1 essay and a final presentation.
 - The final presentation will enable students to build skills necessary to make a concise and inter-disciplinary presentation on any topic covered during the course.
- 1) Class participation, 15%
 - 2) Essay, (due February 28th), 25%
 - 3) Proposal for presentation (due March 6th), 10%
 - 4) Visual presentation, 15%
 - 5) Verbal presentation (10-20 minutes, including questions), 15%
 - 6) Final written report (5-10 pages), 20%

Students must complete the essay and presentation 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 presentations 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.

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.

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 x82147 for any specific question regarding an accommodation.