



# UNIVERSITY OF CALGARY

## DEPARTMENT OF GEOSCIENCE COURSE OUTLINE

1. **Course:** GOPH 453, Mining Geophysics

Lecture Sections:

L01: MoWeFr, 13:00-13:50, ICT 114

Dr. D. Eaton, Office: ES 214, Ph. 403-220-4233, [eatond@ucalgary.ca](mailto:eatond@ucalgary.ca), Office Hours: Thursdays 9-11 am.

Course website or Desire 2 Learn (D2L) course name F2014GOPH453L01

Geoscience Department ES 118, 403-220-5841, [geoscience.ucalgary.ca](http://geoscience.ucalgary.ca), [geosci@ucalgary.ca](mailto:geosci@ucalgary.ca)

2. **Prerequisites:** Geology 201 and Physics 223 and Mathematics 253 or 267 or 277 or 283 or Applied Mathematics 219 and Mathematics 211.

3. **Grading:** The University policy on grading and related matters is described sections [F.1](#) and [F.2](#) of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Lab Assignments (8)	15%
Quizzes (5)	5%
Midterm test	20% or 30% (October 17, 2014)
Group project	15%
Final Examination	45% or 35% (To be scheduled by the Registrar)

Each piece of work (assignment, laboratory report, midterm test or final examination) submitted by the student will be assigned a percentage score. The student's average percentage score for the various components listed above will be combined with the higher of the two indicated weights (i.e., 20% midterm and 40% final examination – OR – 30% midterm and 30% final examination) to produce an overall percentage for the course, which will be used to determine the course letter grade.

The Midterm and Final examinations will be short-answer or multiple-choice format. They are intended to test for comprehension of the material, not memorization of definitions and formulas. Questions will focus on explaining concepts and/or making simple calculations.

The group project provides an opportunity for students to develop presentation and teamwork skills - both of which are critical skills for the workplace. In addition, the group project will provide an opportunity to develop research skills and familiarity with geophysical literature, as well as to explore a topic in greater detail than is possible in the lectures.

Working in groups of 4, students will prepare a 10-minute Powerpoint presentation in one of the following general thematic areas:

- A state-of-the-art geophysical technique (e.g., airborne gravity)
- A mineral exploration case history
- Optimal geophysical approaches used for a class of mineral deposit (e.g., volcanogenic massive sulfide)

Presentations will be marked by the instructor and your peers using the rubric listed below. Material covered in the team presentations will be posted on blackboard, and will be included in the Final Exam.

Groups can be self-selected before Monday September 29. After that date, you will be assigned to a group if you are not already in one. During the term, there will be opportunities for groups to meet during the lecture times and consult with the instructor. Teams are required to record minutes of meetings, which will be submitted to the instructor for credit as part of the project report. The topic for each group must be submitted by email no later than Thursday October 17.

Individual elements of the course (i.e. labs, assignments, exams) will be assigned a percentage score. Final percentage grades for the overall course will be calculated based on the grade weighting scheme indicated above, and will be converted to letter grades as follows:

Letter Grade	Percent	Letter Grade	Percent
A+	95-100	C+	65-69
A	90-94	C	60-64
A-	85-89	C-	56-59
B+	80-84	D+	53-55
B	75-79	D	50-52
B-	70-74	F	0-49

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.6](#) of the University Calendar

5. **Required Textbooks:** N/A

6. **Examination Policy:** A single-sided, hand-written crib sheet and a non-programmable calculator are permitted for the midterm and final exam. Students should also read the Calendar, [Section G](#), on Examinations.

#### 7. OTHER IMPORTANT INFORMATION FOR STUDENTS:

(a) **Academic Misconduct:** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties

(b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).

(c) **Academic Accommodation Policy:** Students with documentable disabilities are referred to the following links: [Calendar entry on students with disabilities](#) and [Student Accessibility Services](#).

(d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>.

(f) **Student Union Information:** VP Academic Phone: 220-3911 Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca).  
SU Faculty Rep. Phone: 220-3913 Email: [sciencerep@su.ucalgary.ca](mailto:sciencerep@su.ucalgary.ca); [Student Ombudsman](#)

(g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

(h) At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses ([www.ucalgary.ca/usri](http://www.ucalgary.ca/usri)). Your responses make a difference - please participate in USRI Surveys.

## GOPH 453 F2014 Course Schedule

<b>Week</b>	<b>Lecture and lab topic(s)</b>
1	Gravity methods
2	Gravity and Magnetic methods
3	Magnetic methods
4	Gamma-ray spectrometry
5	DC Resistivity
	<b>Midterm – October 17</b>
6	Induced Polarization
7	Induced Polarization
8	Frequency-domain EM methods
9	Frequency-domain EM methods
10	Time-domain EM methods
11	Magnetotelluric methods
12	Microseismic monitoring of mines
13	Project Presentations