

UNIVERSITY OF CALGARY
DEPARTMENT OF GEOSCIENCE
COURSE OUTLINE

1. Course: GEOPHYSICS 355 – EXPLORATION GEOPHYSICS

Lecture Section: L01 MWF 16:00-16:50 ST 148 WINTER 2014

Instructor(s): Dr. K.A. Innanen ES 212 210-6837 kinnanen@ucalgary.ca

The course website can be found on blackboard (<http://blackboard.ucalgary.ca>).

Geoscience Department ES 118; (403) 220-5841; geoscience.ucalgary.ca

2. PREREQUISITE(S): Geology 201, Geology 202 or 203; Mathematics 251 or 249 or 281 or Applied Mathematics 271; Mathematics 253 or 283 or Applied Mathematics 219; Physics 211 or 221, and 223.

ANTIREQUISITE(S): Credit for both Geophysics 355 and 365 will not be allowed.

See section 3.5.C in the Faculty of Science section of the online Calendar (<http://www.ucalgary.ca/pubs/calendar/current/sc-3-5.html>)

3. **GRADING:** The University policy on grading and related matters is described in “Academic Regulations, sections F.1 and F.2” of the online University Calendar (<http://www.ucalgary.ca/pubs/calendar/current/f-1.html> and <http://www.ucalgary.ca/pubs/calendar/current/f-2.html>) In determining the overall grade in the course the following weights will be used:

Laboratory Exercises:	
8 Lab Exercises @ 2% each	16%
2 Lab Exercises with full write-up @ 12% each	24%
Midterm Test 1	10%
Midterm Test 2	10%
<u>Final Examination</u>	<u>40%</u> (To be scheduled by the Registrar)
Total	100%

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 indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

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: <http://www.ucalgary.ca/pubs/calendar/current/sc-3-6.html>. It is the student's responsibility to familiarize himself/herself with these regulations. See also <http://www.ucalgary.ca/pubs/calendar/current/e-3.html>.

5. Dates and times of class exercises held outside of class hours: None

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. **EXAMINATION POLICY:** No electronic or written aids (eg. cell phones, tablets, computers, PDAs, notes, textbooks) will be allowed during writing of any exams. Non-programmable calculators will be permitted to answer quantitative questions on exams, if applicable, and permission to do this will be clearly indicated on the examination paper.

Any student who is absent from a test or fails to complete a laboratory assignment or similar set piece of work for legitimate and documented reasons (e.g., illness + doctor's note) must discuss an alternative course of action with the instructor.

1. University of Calgary policy regarding academic honesty and misconduct will be followed rigorously (see 8. below)
2. Each student is expected to bring their own **non-programmable calculator** to exams. **No** programmable calculators, nor electronic devices (eg., smartphone, iphone) will be permitted as a substitute

Students should also read the Calendar, Section G, on Examinations: <http://www.ucalgary.ca/pubs/calendar/current/g.html>.

7. In this course, the quality of the student's writing in laboratory reports will be a factor in the evaluation of those reports. See also <http://www.ucalgary.ca/pubs/calendar/current/e-2.html>.

8. 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 K. Student Misconduct (<http://www.ucalgary.ca/pubs/calendar/current/k.html>) 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 at <http://www.ucalgary.ca/emergencyplan/assemblypoints>.**
- (c) **ACADEMIC ACCOMMODATION POLICY.** Students with documentable disabilities are referred to the following links:
Calendar entry on students with disabilities: <http://www.ucalgary.ca/pubs/calendar/current/b-1.html>
Student Accessibility Services: www.ucalgary.ca/access
- (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.
SU Faculty Rep. **Phone:** 220-3913 **Email:** sciencerep@su.ucalgary.ca Website <http://www.su.ucalgary.ca/home/contact.html>.
Student Ombudsman: www.ucalgary.ca/provost/students/ombuds; ombuds@ucalgary.ca 220-6420
- (g) **INTERNET and ELECTRONIC COMMUNICATION DEVICE Information.** You can assume that in all classes that you attend, **your cell phone should be turned off.** 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.

C. Components of Course for Which a Passing Grade is Essential

Students must achieve a passing grade (minimum of D) on both the lecture portion of the course (average of the midterm and final exams) and the laboratory portion of the course to qualify for a passing grade overall.

D. Grading Scheme

Assignment of letter grades: After you have completed your final exam, your percentage grade will be calculated as above. Your final reported grade will be a letter, determined from your percentage grade as follows:

A+	95 – 100%
A	86 – 94%
A-	80 – 85%
B+	77 – 79%
B	73 – 76%
B-	70 – 72%
C+	67 – 69%
C	63 – 66%
C-	60 – 62%
D+	55 – 59%
D	50 – 54%
F	<50%

E. LECTURE AND LABORATORY CONDUCT

Students (and instructors) are expected to be on time at all lecture and laboratory sessions. Students are expected to respect their colleagues at all times during these sessions, and comport themselves so as not to detract from anyone's learning experience. Use of cell phones and/or electronic devices during these periods is not permitted.

LABORATORY SCHEDULE (subject to change)

1. Seismic refraction basics. Week of Jan 27.
2. Seismic refraction plus-minus method. Week of Feb 3
3. Seismic reflection velocity analysis. Week of Feb 10.
4. Seismic reflectivity and the convolutional model. Week of Feb 24.
5. Seismic interpretation of faults. Week of Mar 3.
6. Seismic interpretation of basins. Week of Mar 10.
7. Seismic interpretation of reefs. Week of Mar 17.
8. Gravity theory. Week of Mar 24.
9. Gravity interpretation. Week of Mar 31.
10. Magnetic interpretation. Week of Apr 7.