



# UNIVERSITY OF CALGARY

## DEPARTMENT OF GEOSCIENCE COURSE OUTLINE FALL 2015

1. **Course:** GLGY 445, Structural Geology

Lecture Sections:

L01: MoWeFr, 10:00-10:50, ST 135

For a listing of all lab sections corresponding with this course, please see the following link:

[http://geoscience.ucalgary.ca/geoscience\\_info/courses/f15](http://geoscience.ucalgary.ca/geoscience_info/courses/f15)

Dr., Bernard Guest, Office: ES 524A, Ph. 403-220-8093, [bguest@ucalgary.ca](mailto:bguest@ucalgary.ca); Office Hours: Monday, 11:00-13:00 or by appointment.

The course website can be found on D2L (<https://d2l.ucalgary.ca>).

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

2. **Prerequisites:** Geology 431. See also Geology [Course Descriptions](#) of the University Calendar. See section 3.5.C in the Faculty of Science section of the online Calendar ([www.ucalgary.ca/pubs/calendar/current/sc-3-5.html](http://www.ucalgary.ca/pubs/calendar/current/sc-3-5.html))

**Antirequisites:** Credit for no more than one of Geology 433, 443, 533, will be allowed.

3. **Grading:** The University policy on grading and related matters is described in 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:

Tophat Monacle in class participation and correctness: 5%

Lab Assignments: 5%

Lab Midterm Test: 15 - 30% (October 20<sup>th</sup> and 22<sup>nd</sup>)

Lecture Midterm Test: 15 - 25% (October 30<sup>th</sup>)

Cumulative Lab Final: 20 - 35% (December 1<sup>st</sup> and 3<sup>rd</sup>)

Cumulative Lecture Final: 15 - 25% (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 indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade, **bearing in mind that an F grade will result if the student does not pass both the Lab and Lecture components.**

**NOTE: The weighting of the exams will be adjusted in favour of the student according to the specified parameters. Lab exams will be open book and open notes**

The conversion between course percentage and letter grade is as follows:

Grading Scale							
A+	95-100	B+	80 - 83%	C+	66 - 69%	D+	54 - 57%
A	88 - 94%	B	75 - 79%	C	62 - 65%	D	50 - 53%
A-	84 - 87%	B-	70 - 74%	C-	58 - 61%	F	<50%

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. **Scheduled out-of-class activities:** There will be no mandatory activities held outside of class hours. Optional tutorial sessions may be held prior to the final exam, but these will be discussed in class prior to the examination period.

**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. **Course Materials:** The required text for this course is *Structural Geology of Rocks and Regions*, 3<sup>rd</sup> Edition; Davis, Reynolds and Kluth. Although not required, it is recommended that the student obtain a copy of Marshak and Mitra and also bring their copy of *An Introduction to Geological Structures and Maps*, by George M Bennison, Keith A Moseley, and Paul A. Olver Arnold, 2011, 8<sup>th</sup> Edition to lab periods. These texts will provide a useful reference for the lab exercises.
7. **Examination Policy:** Lecture exams will be closed book written exams possibly with a multiple-choice component. Lab Exams will be open book open notes with calculators and lab equipment allowed. Students should also read the Calendar, [Section G](#), on Examinations.
8. **Writing across the curriculum statement:** In this course, the quality of the student's writing will be a factor in the evaluation of all written work (laboratories, assignments, and exams). Students are expected to submit high quality work. In all cases, quality work must be well organized, clearly written and presented, and have all information sources properly noted. Where applicable, questions should be labelled and in order, all tables and diagrams properly labelled, assumptions clearly stated, and final answers clearly indicated (with appropriate units and significant figures). You are expected to **show all your work**, including equations and sample calculations where necessary (especially when relying on spreadsheets or computer programs to generate results). See also [Section E.2](#) of the University Calendar.
9. **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: Students with Disabilities: <http://www.ucalgary.ca/pubs/calendar/current/b-1.html> and Student Accessibility Services: <http://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: 403 220-3911 Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca)  
SU Faculty Rep. Phone: 403 220-3913 Email: [science1@su.ucalgary.ca](mailto:science1@su.ucalgary.ca), [science2@su.ucalgary.ca](mailto:science2@su.ucalgary.ca) and [science3@su.ucalgary.ca](mailto:science3@su.ucalgary.ca);  
Student Ombuds Office: 403-220-6420 Email: [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca); <http://ucalgary.ca/provost/students/ombuds>
  - (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) **U.S.R.I.:** 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.

## Lecture Schedule

Week	Lecture topic	Mon. lecture and Lab topic
1	Intro and Intro to structures	Strike and dip, Maps, Planes, lines
2	Strain is Deformation	Structure contours
3	Stress the Driver of Deformation	Thickness calculations
4	Stress and Rheology – deformation style	Mohr's Circle
5	Rheology and Deformation Mechanisms	Rocks labs
6	Foliations-lineations – (No Monday period)	Rocks lab
7	Progressive deformation	Lab Midterm week
8	Joints and Fractures – Lec. Midterm (Fri Oct 30)	Folds and the Stereonet
9	Faults – Deformation types	Displacement calculations
10	Faults – Deformation types (Monday only)	Reading week
11	Folds – Deformation types	Failure envelopes
12	Folds – Deformation types	Balanced cross--- sections
13	Fault and Fold interactions	Balanced cross--- sections
14	Global tectonics	Lab Final week
15	Mon	Classes end