



## COURSE OUTLINE

### 1. **Course:** GLGY 445, Structural Geology - Winter 2023

Lecture 01 : MW 11:00 - 12:15 in TISTUDIODE

Instructor	Email	Phone	Office	Hours
Dr Eva Enkelmann	eva.enkelmann@ucalgary.ca	403 220-5852	ES 518	Office hours are by appointment. Please schedule an appointment with me either via email or after the lecture. I will respond to your email inquiries about the course within 24 hours except on weekends and holidays. All questions regarding the labs (in-lab activities and lab homework assignments) need to be addressed by your TA.

To account for any necessary transition to remote learning for the current semester, courses with in-person lectures, labs, or tutorials may be shifted to remote delivery for a certain period of time. In addition, adjustments may be made to the modality and format of assessments and deadlines, as well as to other course components and/or requirements, so that all coursework tasks are in line with the necessary and evolving health precautions for all involved (students and staff).

#### **In Person Delivery Details:**

Lectures: Monday and Wednesday at 11 AM at T1140/148

Labs: Tuesdays

#### **Re-Entry Protocol for Labs and Classrooms:**

To limit the spread of COVID-19 on campus, the University of Calgary has implemented safety measures to ensure the campus is a safe and welcoming space for students, faculty and staff. The most current safety information for campus can be found [here](#).

#### **Course Site:**

D2L: GLGY 445 (Winter 2023)-Structural Geology

**Note:** Students must use their U of C account for all course correspondence.

#### **Equity Diversity & Inclusion:**

The University of Calgary is committed to creating an equitable, diverse and inclusive campus, and condemns harm and discrimination of any form. We value all persons regardless of their race, gender, ethnicity, age, LGBTQIA2S+ identity and expression, disability, religion, spirituality, and socioeconomic status. The Faculty of Science strives to extend these values in every aspect of our courses, research, and teachings to better promote academic excellence and foster belonging for all.

### 2. **Requisites:**

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

#### **Prerequisite(s):**

Geology 343.

#### **Antirequisite(s):**

Credit for Geology 445 and 341 will not be allowed.

### 3. **Grading:**

The University policy on grading and related matters is described in [F.1](#) and [F.2](#) of the online University Calendar.

In determining the overall grade in the course the following weights will be used:

Course Component	Weight	Due Date (duration for exams)	Modality for exams	Location for exams
Lab Homework Assignments	15%	Ongoing		
Quizzes and Group Activities <sup>1</sup>	25%	Ongoing		
Lab Participation <sup>2</sup>	5%	Ongoing		
Discussion Board Participation <sup>3</sup>	5%	Ongoing		
Midterm	15%	Feb 15 2023 at 11:00 am (45 Minutes)	in-person	TI 140/148 lecture class
Lab Final Exam <sup>4</sup>	20%	Apr 04 2023		
Oral Final Exam <sup>5</sup>	15%	Apr 17 2023 at 12:00 am (15 Minutes)	online	zoom

<sup>1</sup> Due to the design of the course, a student can only miss 3 in-person component(s).

<sup>2</sup> Due to the design of the course, a student can only miss 2 in-person lab components.

<sup>3</sup> Rubrics will be provided through D2L for the evaluation of the discussion board participation.

<sup>4</sup> Lab final will be written during the normal lab section hours.

<sup>5</sup> A sign up sheet will be set up for students to pick a 15 minutes time slot on April 17 to accommodate other scheduled exams.

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component 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.

The conversion between a percentage grade and letter grade is as follows.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
<b>Minimum % Required</b>	95 %	90 %	85 %	80%	75%	70 %	67 %	64%	60%	55 %	50 %

The University of Calgary offers a [flexible grade option](https://science.ucalgary.ca/current-students/undergraduate/program-advising/flexible-grading-option-cg-grade), Credit Granted (CG) to support student's breadth of learning and student wellness. Faculty units may have additional requirements or restrictions for the use of the CG grade at the faculty, degree or program level. To see the full list of Faculty of Science courses where CG is not eligible, please visit the following website: <https://science.ucalgary.ca/current-students/undergraduate/program-advising/flexible-grading-option-cg-grade>

#### 4. Missed Components Of Term Work:

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, one possible arrangement is that the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course. This option is at the discretion of the coordinator and may not be a viable option based on the design of this course.

Labs run weekly on Tuesday. Lab homework assignments are due at the beginning of the student's lab section the week following its assignment. A completion grade will be assigned (e.g. 0, 0.5, 1) and the lab will be immediately handed back.

The answer key will be posted Tuesday after the last lab section. Students are responsible for correcting their own lab assignment and corrections will be due the following week in their lab section. Corrections will be given a mark for completeness (e.g. 0, 0.5, 1). The grade for the lab will be the product of the completion and the correction grades (e.g.  $0.5 \times 1 = 0.5$ ). Don't forget to submit the lab a second time even if you got a 1 for the completeness.

If you miss the lab final (4 April 2023) you will have to schedule a make-up final with the TA of your lab section.

There will be many pop-up quizzes and group exercises in the lectures, that will together count 25% of the final grade. There are no make-up quizzes for any reason that may come up that causes a student to not take the quiz. However, the three quizzes/group exercises with the lowest grades will be dropped for calculating the overall grade. With other words, you can miss up to three quizzes/group assignments.

If you miss the midterm exam, you will need to schedule a make-up exam with the Dr. Enkelmann via email. The make up exam will be scheduled the week after the winter reading week (27 February-1 March, 2023).

## 5. **Scheduled Out-of-Class Activities:**

There are no scheduled out of class activities for this course.

## 6. **Course Materials:**

Required Textbook(s):

Haakon Fossen, *Structural Geology 2nd Edition*: Cambridge.

Any additional readings will be posted at D2L

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC [ELearning](#) online website.

## 7. **Examination Policy:**

Exams are closed book and may include multiple choice and both short and long answer format questions and sketching.

Students should also read the Calendar, [Section G](#), on Examinations.

## 8. **Approved Mandatory And Optional Course Supplemental Fees:**

There are no mandatory or optional course supplemental fees for this course.

## 9. **Writing Across The Curriculum Statement:**

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section [E.2](#) of the University Calendar.

## 10. **Human Studies Statement:**

See also [Section E.5](#) of the University Calendar.

## 11. **Reappraisal Of Grades:**

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.

- a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work [form](#) to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections [I.1](#) and [I.2](#) of the University Calendar
- b. **Final Exam:** The student shall submit the request to Enrolment Services. See [Section I.3](#) of the University Calendar.

## 12. **Other Important Information For Students:**

- a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university

community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, [Mental Health Services Website](#)) and the Campus Mental Health Strategy website ([Mental Health](#)).

- b. **SU Wellness Services:** For more information, see their [website](#) or call [403-210-9355](tel:403-210-9355).
- c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email ([svsa@ucalgary.ca](mailto:svsa@ucalgary.ca)) or phone at [403-220-2208](tel:403-220-2208). The complete University of Calgary policy on sexual violence can be viewed [here](#).
- d. **Student Ombuds Office:** A safe place for all students of the University of Calgary to discuss student related issues, interpersonal conflict, academic and non-academic concerns, and many other problems.
- e. **Student Union Information:** [SU contact](#), Email your SU Science Reps: [science1@su.ucalgary.ca](mailto:science1@su.ucalgary.ca), [science2@su.ucalgary.ca](mailto:science2@su.ucalgary.ca), [science3@su.ucalgary.ca](mailto:science3@su.ucalgary.ca),
- f. **Academic Accommodation Policy:**

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf>

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf>.

Students needing an accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, by filling out the [Request for Academic Accommodation Form](#) and sending it to Brandon Karchewski by email [brandon.karchewski@ucalgary.ca](mailto:brandon.karchewski@ucalgary.ca) preferably 10 business days before the due date of an assessment or scheduled absence.

- g. **Misconduct:** Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional [Code of Conduct](#) and promote academic integrity in upholding the University of Calgary's reputation of excellence. Some examples of academic misconduct include but are not limited to: posting course material to online platforms or file sharing without the course instructor's consent; submitting or presenting work as if it were the student's own work; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. Please read the following to inform yourself more on academic integrity:

[Student Handbook on Academic Integrity](#)  
[Student Academic Misconduct Policy](#) and [Procedure](#)  
[Faculty of Science Academic Misconduct Process](#)  
[Research Integrity Policy](#)

Additional information is available on the [Student Success Centre Academic Integrity page](#)

- h. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or [non-academic misconduct](#), in addition to any other remedies available at law.
- i. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPPA). 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 [Legal Services](#) website.
- j. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction ([USRI](#)) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with

evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

**Course Outcomes:**

- Describe the difference between stress and strain
- Calculate stress in a rock volume and distinguish between lithostatic, hydrostatic, and differential stress fields.
- Use Mohr diagrams to make predictions about the strain (faults and fractures) that will result from a given stress field.
- Explain the role that rheology plays in controlling deformation style and deformation rate, and explain the role of fluids in controlling rock strength and make failure predictions for stressed dry and wet systems.
- Draw the anatomy of the different classes of faults, folds and fractures, and describe the link between regional tectonic stress fields and brittle deformation styles; specifically, modes of faulting and folding, and analyze and interpret geologic maps and draw basic balanced geologic cross-sections.

Electronically Approved - Dec 27 2022 18:57

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**Department Approval**

Electronically Approved - Jan 06 2023 15:26

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**Associate Dean's Approval**