



COURSE OUTLINE

1. **Course:** GLGY 343, 3D Geologic Structures and Methods - Winter 2022

Lecture 01 : MWF 10:00 - 10:50 in MS 211

Instructor	Email	Phone	Office	Hours
Dr Rodolfo Meyer	rmeyer@ucalgary.ca	403 210-7848	ES 110	Weekly hours will be announced following consultation with the students.

To account for any necessary transition to remote learning in the winter 2022 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:

The course is planned to be delivered in-person to allow for better instructor-students communication. However, five (5) Quizzes are scheduled outside of lecture times to be delivered synchronously, online.

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](#). **Online Delivery Details:**

This course is being offered online in real-time via scheduled meeting times, you are required to be online at the same time.

To help ensure Zoom sessions are private, do not share the Zoom link or password with others, or on any social media platforms. Zoom links and passwords are only intended for students registered in the course. Zoom recordings and materials presented in Zoom, including any teaching materials, must not be shared, distributed or published without the instructor's permission.

Regularly scheduled **Office Hours** for both Rudi (course instructor) and the Teaching Assistants will be established in the 1st week of classes in consultation with the entire class. Aside from regularly scheduled office hours with the instructor(s), virtual appointments can be scheduled via email.

NOTE that overall the instructors will aim to respond to your email inquiries related to the course within 24 hours, except on weekends and holidays.

Both Lecture and Lab periods will be scheduled to run as synchronous classes.

At least until Feb 18, **Lectures** (MWF 10:00-10:50am) will be presented as Zoom classes with live interaction made possible both verbally and as text entries into the Chat box. Lecture presentations will be posted beforehand on the Class Management System, d2L -see tentative schedule of lecture topics at the bottom of this outline

During regularly scheduled **Lab periods**, Tuesdays 11:00-1:50pm (B01) and 2:00-4:50 pm (B02), the TA (and at times, Rudi) will be connected with students in the class via Zoom to introduce the given lab exercise/assignment, communicating and working with the students on the required tasks, and respond to questions. Any given Lab Assignments will be posted beforehand on d2L.

Five (5) Quizzes will be scheduled outside of regularly scheduled class hours as synchronous, online quizzes run via the Dropbox in d2L. This will give students more time to download (and print if necessary) given Quiz files, do the work required, and upload the submitted Quiz file to the corresponding Dropbox. Schedule for these Quizzes is provided in the **Grading** section.

Course Site:

D2L: GLGY 343 L01-(Winter 2022)-3D Geologic Structures and Methods

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.

Course Outcomes:

- Use appropriate terminology to define the orientation of lines and surfaces (planar/curved) in order to describe the geometry of simple geological bodies.
- Construct scaled geological maps based on information of the location and orientation of features of geological interest e.g. unit contacts, unconformities, faults.
- Construct scaled geological cross-sections from surface and subsurface maps in order to illustrate and expose the true structure of given terrains.
- Interpret simple geological maps and cross-sections to derive a sequence of geological events based on relative position and cross-cutting relationships between the geological units present.
- Use stereonet to determine the angular relationships between linear and planar geological features e.g. true vs. apparent dips of cross-bedding, fold limbs and axial planes.
- Know basic techniques of acquisition of geological data in the field including field notes, compass measurements, and measurement of stratigraphic columns.
- Visualize the shape and dimensions of common geological structures represented on maps, cross-sections, photos, as well as on digital 3D terrain images

2. Requisites:

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

Prerequisite(s):

Geology 381.

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
TopHat classroom participation ¹	5%	Ongoing		
Lab Assignments ²	40%	Ongoing		
Quiz 1 ³	8%	Jan 24 2022 at 05:00 pm (105 Minutes)	online	Online (d2L)
Quiz 2 ⁴	8%	Feb 07 2022 at 05:00 pm (105 Minutes)	online	Online (d2L)
Quiz 3 ⁵	8%	Mar 07 2022 at 05:00 pm (105 Minutes)	online	Online (D2)
Quiz 4 ⁶	8%	Mar 21 2022 at 05:00 pm (105 Minutes)	online	Online (d2L)
Quiz 5 ⁷	8%	Apr 04 2022 at 05:00 pm (105 Minutes)	online	Online (d2L)
Registrar Scheduled Final Exam	15%	Will be available when the final exam schedule is released by the Registrar	in person	Will be available when the final exam schedule is released by the Registrar

¹ Based on participation only.

² Lab Assignments will be due by 6 pm on the Friday following each Lab.

³ Quiz 1 already took place at the time of writing.

⁴ Same format as Quiz 1

⁵ Same format as Quiz 1

⁶ Same format as Quiz 1

⁷ Same format as Quiz 1

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
Minimum % Required	95 %	90 %	85 %	80%	75%	70 %	66 %	62%	58%	54 %	50 %

The Top Hat classroom response mark of 5% is based on participation only. Note that students don't have to be present for every question – a score of about 85% usually corresponds to a full mark. If you wish to opt-out of this mark the corresponding 5% will be added to the weight of the Final Exam.

To opt-out of TopHat marks students must inform the instructor via email by Friday April 8.

This course will have a Registrar Scheduled Final exam that will be delivered in-person and on campus. [The Final Examination Schedule](#) will be published by the Registrar's Office approximately one month after the start of the term. The final exam for this course will be designed to be completed within 2 hours.

Labs take place on Tuesdays and the corresponding Lab Assignments can be substantially completed during the 3-hour lab periods. **Lab Assignments will be due by 6 pm on the Friday following each Lab** with the idea that instructors will be able to mark the assignments, and provide feedback, by the start of the next Lab.

NOTE that this means that you will have a Lab Assignment to complete every week of the semester except for the 1st week of classes and the week of Feb 21 (term break). To derive the **grade for the Lab Assignments** the lowest mark obtained will be ignored when calculating the average of all the other Lab Assignments.

Digital submission of Lab Assignments is much preferred. Every Lab will have a d2L Dropbox set-up for this purpose *-pdf file format required*. An alternative (physical) dropbox will be set-up for hard-copy submission of Lab Assignments.

The University of Calgary offers a [flexible grade option](#), 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.

Lab Assignments will be due by 6 pm on the Friday following each Lab to give the TA time to mark the assignment prior to the next Lab period. Due dates can only be changed for legitimate reasons (e.g. illness or other justified conflict) with consent from the TA, who at times may consult with the course instructor. Any accommodations are decided on a case-by-case basis. Aside from the above, **late submissions of Lab Assignments are assigned a penalty of 25% per day, up to a maximum of 2 days (50%).**

5. Scheduled Out-of-Class Activities:

The following out of class activities are scheduled for this course.

Activity	Location	Date and Time	Duration
Quiz 1	Online (d2L)	Monday, January 24, 2022 at 5:00 pm	105 Minutes
Quiz 2	Online (d2L)	Monday, February 7, 2022 at 5:00 pm	105 Minutes
Quiz 3	Online	Monday, March 7, 2022 at 5:00 pm	105 Minutes
Quiz 4	Online	Monday, February 21, 2022 at 5:00 pm	105 Minutes
Quiz 5	Online	Monday, April 4, 2022 at 5:00 pm	105 Minutes

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a conflict with the out-of-class-time-activity, please contact your course coordinator/instructor no later than **14 days prior** to the date of the out-of-class activity so that alternative arrangements may be made.

6. Course Materials:

Required Textbook(s):

Bennison, Olver and Moseley, *Introduction to Geological Structures & Maps (8th Edition)*: Routledge.

The publisher (Taylor & Francis) makes the textbook freely available online -it can be read online or a .pdf copy of the ebook can be downloaded. See the following link:

<https://doi-org.ezproxy.lib.ucalgary.ca/10.4324/9780203783795>

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 typically require drafting tools including pencils, eraser, ruler (w/mm graduations), protractor, one or two triangles. A non-programmable calculator capable of trigonometric calculations is also required.

No other Quiz/Exam aids are allowed or necessary.

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:

Students will not participate as subjects or researchers in human studies.

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 www.ucalgary.ca/wellnesscentre 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) or phone at [403-220-2208](tel:403-220-2208). The complete University of Calgary policy on sexual violence can be viewed at (<https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Sexual-and-Gender-Based-Violence-Policy.pdf>)
- d. **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](#)
[Research Integrity Policy](#)

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

e. 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 Jennifer Cuthbertson by email cuthberj@ucalgary.ca preferably 10 business days before the due date of an assessment or scheduled absence.

- f. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). 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.
- g. **Student Union Information:** [VP Academic](#), Phone: [403-220-3911](#) Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: [403-220-3913](#) Email: sciencerep@su.ucalgary.ca. [Student Ombudsman](#), Email: ombuds@ucalgary.ca.
- h. **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.
- i. **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.

GLGY 343 Winter 2022 - COURSE TOPICS SCHEDULE

**Tentative, subject to minor changes*

	WEEK of	LECTURES MWF 10-10:50 - MS 211	LABS Tuesday at 11 am and 2 pm - ES 149
1	Jan 10	Introduction: organization, objectives, assessments, expectations. Topography and horizontal strata. Introduction to <i>Visible Geology</i> ©	<i>NO LABS this week</i>
2	Jan 17	Topography and inclined/folded strata; the use of structure contours.	LAB 1: Lines and planes, strike and dip, apparent dip, topographic profile
3	Jan 24	Monday January 24: QUIZ 1 Inclined surfaces <i>continued</i> . Unconformities.	LAB 2: Inclined strata on maps and cross-sections
4	Jan 31	Unconformities <i>continued</i> Introduction to folds: nomenclature, classification, map patterns.	LAB 3: Unconformity surfaces on maps and cross-sections.
5	Feb 7	Monday February 7: QUIZ 2 Folds <i>continued</i> .	LAB 4: Folded strata on maps and cross-sections
6	Feb 14	Introduction to the use of stereonet.	LAB 5: Use of stereonet
7	Feb 21	READING WEEK: NO LECTURES	NO LABS
8	Feb 28	Introduction to faults: terminology, map patterns, 3D fault problems.	LAB 6: Faulted strata on maps and cross-sections
9	Mar 7	Monday March 7: QUIZ 3 Faults <i>continued</i> . Visualizing 3D sedimentary bodies.	LAB 7: Faulted/Folded strata on maps & cross-sections
10	Mar 14	Making geological maps: methods, symbols, surface & subsurface. Subsurface maps: representation of structure and thickness.	LAB 8: Inclined surfaces in clastic sedimentology
11	Mar 21	Monday March 21: QUIZ 4 Igneous bodies in maps and cross-sections.	LAB 9: Contour maps in the subsurface: Structure and Isopach maps
12	Mar 28	Using maps and cross-sections to infer geologic history. A day in the field with a mapping geologist.	LAB 10: Igneous intrusions on maps and cross-sections
13	April 4	Monday April 4: QUIZ 5 Meander bars <i>revisited</i> . Invited speaker : on Geomodelling	LAB 11: <i>to be determined</i>
14	April 11	Review LAST DAY OF CLASSES : Tuesday April 12	NO LABS

Electronically Approved - Jan 31 2022 09:23

Department Approval

Electronically Approved - Feb 01 2022 09:04

Associate Dean's Approval