



COURSE OUTLINE

1. **Course:** GLGY 209, Introduction To Geology - Winter 2019

Lecture 02: TR 11:00 - 12:15 in ENA 201

Instructor	Email	Phone	Office	Hours
Glenn Dolphin	glenn.dolphin@ucalgary.ca	403 220-6025	ES 134	By appointment

I am so happy to welcome you to GLGY 209, Introduction to Geology. This, I think, is going to be a class like you have never taken before. My understanding is that many, or most, of you are not science majors. Some may not even like science. That's OK. The way the course is structured, I think it might actually change your attitude toward science and maybe even you'll decide to like it. The class is also VERY BIG. There is over 220 students, capping eventually at about 250. This seems to put a lot of constraints on how the course can run. However, I am structuring the course to alleviate the "large class" feel.

Through my instructional strategies,

- I hope to foster a "small class" feel, by breaking the entire class into small groups (about 5) for doing all work that will be graded.
- I hope to level the field between those who might know a lot about science and those who might not know too much by contextualizing geology content in the content you might be more familiar with - drama, literature, poetry, art, music, politics, economics, history, and sociology. Small groups will spend a lot of time (in and out of class) discussing issues and developing ideas.
- I hope to foster an environment where you don't feel like an anonymous student, a number, as is the case for most large classes.
- Knowing the literature that supports the idea that useful learning happens best as a result of active conversation and argument, I hope to foster such learning in your teams where those conversations and arguments can happen more frequently and far more effectively than if were up to me to have such conversations with the 220 of you.
- Finally, I hope that by introducing you to the geology in the context all of these other disciplines, you will engage in the discussion of real geologic problems and learn the content without really knowing that you are doing it.

Because of this unique approach to teaching geology (and believe me, I don't know of anyone who is teaching a course even remotely like this), there is no book that addresses the material like I think would best facilitate you learning it. That is why I spent the summer completing and revising the text for this course. The text is not long (Yay!) and not full of vocabulary that you need to memorize, regurgitate and then forget after the end of the course (double Yay!), and it gives a much more realistic portrayal of how science, and especially geology, happens. To minimize the cost to the student, the book is only available in an electronic format, which can be bought directly from the publisher, and have immediate access. (From the publisher: Here is the friendly URL for your students. The website link will be taken off when classes are completed and the students will only have the option of the ebook. <https://he.kendallhunt.com/dolphin> . The ebook isbn is 9781524975555.)

The coursework (as far as graded assignments) is full of choice and will hopefully be engaging and help you in your development of an appreciation of the content material. There are many different options and many of them have real-world implications, such as editing, or even creating Wikipedia pages about some facet of the course content; letters to the editors of different texts, helping to fortify the class text with your own research. There will be the opportunity to give your group work to another group for comments and "plussing" (adding to the original ideas). Because it is my opinion that meaningful learning takes a lot of communication, you will have the opportunity to learn, even during exams, from your group members. This is not to make the course "easy" but to make it as superior a learning experience as possible.

I will end here for now. I have attached three documents:

1. A concept map of teaching strategies aimed at achieving certain social goals in the course,
2. A concept map showing the course goals and learning outcomes and how I intend to have you meet those

outcomes, and

3. The course outline. This gives the general flow of the class, what reading you are responsible for, and what in class work will be expected. This is not set in stone, and depending on how things go, we may take longer on some things, or not need to take so long on others.

Course Site:

D2L: GLGY 209 L02-(Winter 2019)-Introduction To Geology

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

2. Requisites:

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

N/A

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:

Component(s)	Weighting %	Date
Assessment of development I	20	01.31.2018
Assessment of development II	20	14.03.2018
Final Exam	30	Scheduled by registrar
Other (Group assignments, final project, etc.)	30	variable dates

Group/self-assessment a multiplier ($1 \geq x \geq 0$) used in calculating your final mark for the course.

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 %	65 %	60%	55%	50 %	45 %

This course has a registrar scheduled final exam.

4. Missed Components Of Term Work:

In the event that a student misses the midterm or any course work due to illness, supporting documentation, such as a medical note or a statutory declaration will be required (see [Section N.1](#); for more information regarding the use of statutory declaration/medical notes, see [FAQ](#)). Absences must be reported within 48 hrs.

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 themselves with these regulations. See also [Section E.3](#) of the University Calendar.

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5. Scheduled Out-of-Class Activities:

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

6. Course Materials:

Required Textbook(s):

Glenn Dolphin, *Stories in Geology: What we know and how we figured it out* Edition e Available January
Kendall-Hunt.

From the publisher: Here is the friendly URL for your students. The website link will be taken off when classes are completed and the students will only have the option of the ebook. <https://he.kendallhunt.com/dolphin> . The ebook isbn is 9781524975555.

7. Examination Policy:

No aids are allowed on tests or examinations.

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.

All assignments that have a written component will be marked with writing mechanics in mind.

10. Human Studies Statement:

If you agree, your course work may be used for research purposes. Your responses will remain anonymous and confidential. Grouped data (no individual responses) may be used in academic presentations and publications. Participation in such research is voluntary and will not influence grades in this course. Students' signed consent forms will be withheld from instructors until after final grades are submitted. More information will be provided at the time student participation is requested.

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

Part of my responsibility in the geology department is to investigate how students learn and what types of teaching strategies work best to facilitate that learning. As a result, I will be using some of the assignments you produce as data to assess the development of your understandings. The assignments that I will be using as data are assignments that you will be doing as a part of the course, already. The analysis of the data will have **no impact** on your grade in the course and will take place after the course is done, and the grades have all been submitted. I will have all of the data (individual and group responses to exam questions and short- and long-term assignments) anonymized (all group and personal identifying information removed), so I can analyze and discern generalities in responses. Your participation in this is greatly appreciated and will help enhance the learning of future students by helping me to understand what kinds of teaching strategies seemed to work well and which ones need some improvement. Again, there will be no personal or identifying information connected to any of the data analyzed. If you wish, you can opt out of the research aspect by sending me a signed letter asking for your personal responses to be expunged from the data collection process. If you would like to follow up on the results that I reach, you may email me for such information. More details to follow

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 **15 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 immediately submit the Reappraisal of Graded Term work form to the department in which the course is offered. The department will arrange for a re-assessment of the work if, and only if, the student has sufficient academic grounds. 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 Center:** The Students Union Wellness Centre provides health and wellness support for students including information and counselling on physical health, mental health and nutrition. For more information, see www.ucalgary.ca/wellnesscentre or call [403-210-9355](tel:403-210-9355).
- c. **Sexual Violence:** The University of Calgary is committed to fostering a safe, productive learning environment. The Sexual Violence Policy (<https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>) is a fundamental element in creating and sustaining a safer campus environment for all community members. We understand that sexual violence can undermine students' academic success and we encourage students who have experienced some form of sexual misconduct to talk to someone about their experience, so they can get the support they need. 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).
- d. **Misconduct:** 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. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/ fabrication of experimental values in a report. **These are only examples.**
- e. **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- f. **Academic Accommodation Policy:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at [procedure-for-accommodations-for-students-with-disabilities.pdf](#).

Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Sr. Instructor of the Department of Geoscience, Dr. Rudi Meyer by email rmeyer@ucalgary.ca or phone 403-210-7848. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than **14 days** prior to the date in question. See [Section E.4](#) of the University Calendar.
- g. **Safewalk:** Campus Security will escort individuals day or night (See the [Campus Safewalk](#) website). Call [403-220-5333](tel:403-220-5333) for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- h. **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.
- i. **Student Union Information:** [VP Academic](#), Phone: [403-220-3911](tel:403-220-3911) Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: [403-220-3913](tel:403-220-3913) Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: suvpaca@ucalgary.ca.
- j. **Internet and Electronic Device Information:** Unless instructed otherwise, cell phones should be turned off during class. All communication with other individuals via laptop, tablet, smart phone or other device is

prohibited during class unless specifically permitted by the instructor. Students that violate this policy may be asked to leave the classroom. Repeated violations may result in a charge of misconduct.

k. **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.

l. **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.

The following is an APPROXIMATE schedule of topics, reading and writing assignments. Topics sequence and timing is subject to change depending on prevailing circumstances.

	Date	Content material	Activity	Reading prior to class	Course Outcomes:
Week 1	8 January	Greetings and general remarks	<ul style="list-style-type: none"> Tool maker's paradigm parable What is learning? Making groups 	No Reading!	<ul style="list-style-type: none"> Implement the principles of science in the study of geological (and geophysical in subsidiary) sciences. Implement the principles of science in the study of the fossil record.
	LECTURE 1				
	10 January	Nicholas Steno and his 4 principles Uniformitarianism	<ul style="list-style-type: none"> Setting the stage for inquiry The nature of history Steno's 4 Principles 	Chapter 1	
Week 2	15 January	What are fossils? What can we learn about the past from them?	<ul style="list-style-type: none"> Visible geology activity 	Chapter 2: Clues of the Earth's Past: Giving Fossils Meaning	<ul style="list-style-type: none"> Develop a defensible model of the Earth structure, composition, and its history through time. Develop a defensible model for the increase of complexity of the life forms in the Archean and Proterozoic. Develop a defensible model for environmental challenges in the evolution of earlier life forms on Earth
	17 January	Mass extinctions and the rise of catastrophism	<ul style="list-style-type: none"> Dinosaur extinction case studies 	Chapter 2: Historical case studies and Dawn of the endless night	
	LECTURE 4				
Week 3	22 January	The use of index fossils Maps		Chapter 3: The Human Pedigree: Icons, Extinctions, and Ice Ages	<ul style="list-style-type: none"> Operate with basic concepts of geology, such as minerals and mineral groups, major rock types and rock cycle, and geological time. Develop a defensible model for the calculation of the age of the Earth.
	LECTURE 5				
	24 January	Evolution and uniformity Ice ages		Chapter 3: Historical case study of Alfred Russel Wallace, Ice ages: an alien idea	
Week 4	29 January	Early "bottom-up" attempts at measure the age of the earth		Chapter 4: Breaking with Tradition: Empiricism Rises	
	LECTURE 7	Weathering and erosion			
	31 January	Assessment of development - 1			
Week 5	5 February	Lord Kelvin and a "top-down" approach	Team member evaluations	Chapter 5: Deposition Rates: The	

	LECTURE 8			Sands of Time
	7 February	Lord Kelvin and the age of the earth debate	<ul style="list-style-type: none"> ◦ Dramatization ◦ Discussion of role of assumptions 	Chapter 5
	LECTURE 9			
Week 6	12 February	The Dial painter illness	<ul style="list-style-type: none"> ◦ Age of the earth debate assignment 	Chapters 5
	LECTURE 10		Influence of advertising	
	14 February	A new piece of information		Chapter 5
	LECTURE 11			
Week 7	19 February	Reading week	No assignment	
	21 February	Reading week	No assignment	
Week 8	26 February	Earth's history Toxicity and disorder	<ul style="list-style-type: none"> ◦ Making models of a billion 	Chapter 5
	lecture 12			
	28 February	Early models of the earth's dynamics	<ul style="list-style-type: none"> ◦ Map activity ◦ Compare/contrast models of Earth's dynamics 	Chapter 6
	LECTURE 12			
Week 9	5 March	The development of the controversy	<ul style="list-style-type: none"> ◦ Defining "Drifters" vs the "Fixists" 	Chapter 6
	LECTURE 13			
	7 March	History of US seismicity	<ul style="list-style-type: none"> ◦ Damnedest Finest ruins 	Chapter 7
	LECTURE 14			
Week 10	12 March	What is an earthquake?	<ul style="list-style-type: none"> ◦ P- and S- wave models 	Chapter 7
	LECTURE 15			
	14 March	Assessment of development-2		
	LECTURE 16			
Week 11	19 March	What can we discern from the locations of earthquakes?	<ul style="list-style-type: none"> ◦ Extended seismicity activity 	Team member evaluations Chapter 7
	LECTURE 16			
	21 March	Studying the oceans and a new model of Earth dynamics		Chapter 8
	LECTURE 17			

Week 12	26 March	Geo- and paleomagnetism		Chapter 8
	LECTURE 18			
	28 March	Why we still have mountains and a new controversy		Chapter 8
	LECTURE 19			
Week 13	2 April	Long term project group work period	Take advantage of this time to make headway on your long-term research project	Whatever reading might be applicable to contribute to your group research paper
	4 April	Models and modeling		Chapter 9
	LECTURE 21			
	9 April	Nature of science and importance of geology		Chapter 10
Week 14	LECTURE 22			
	11 April	Some philosophy and final thoughts	<ul style="list-style-type: none"> Long term project due by end of today 	Chapter 10
	LECTURE 23The answer to the questions			

Department Approval:

Electronically Approved

Date: 2018-12-18 10:44