



**UNIVERSITY OF
CALGARY**

DEPARTMENT OF GEOSCIENCE
COURSE OUTLINE
FALL 2015

1. **Course:** GLGY 201, Principles of Geoscience

Lecture Sections:

L01: MoWeFr, 09:00-09:50, KNB 132

L02: MoWeFr, 11:00-11:50, KNB 132

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

http://geoscience.ucalgary.ca/geoscience_info/courses/f15

Lecture Instructors		Office Hours*
Name:	Dr. Glenn Dolphin	<i>By appointment</i>
Office Location:	ES134	
Phone:	403-220-6025	
<i>email:</i>	<i>gdolphin@ucalgary.ca</i>	
Name:	Dr. Alexander Dutchak	<i>By appointment</i>
Office Location:	ES 240	
Phone:	403-210-6117	
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Name:	Dr. Brandon Karchewski	<i>By appointment</i>
Office Location:	ES 108	
Phone:	403-220-6678	
<i>email:</i>	<i>brandon.karchewski@ucalgary.ca</i>	
Lab Coordinator		<i>By appointment</i>
Name:	Dr. Jennifer Cuthbertson	
Office Location:	ES 520	
<i>email:</i>	cuthberj@ucalgary.ca	

Geoscience Department ES 118, 403-220-5841, geoscience.ucalgary.ca, geoscience@ucalgary.ca

2. **Prerequisites:** N/A

Antirequisite: Credit for both Geology 201 and 209 will not be allowed. See [Course Descriptions](#) in the University Calendar.

3. **Learning Objectives:**

By the end of this course students should be able to:

1. **Describe and interpret** the types of evidence that inform our understanding of geological processes.
2. **Describe** the external and internal structure of the Earth and the geophysical and geomorphological processes that operate on and within it.
3. **Explain** the fundamentals of tectonic theory, its historical development, and how it explains the geologic evidence observed at the surface of the Earth.

4. **Compare and contrast** the *processes* that form similar, but different features (e.g. coarse grained granite vs. coarse grained sandstone, mountains vs. volcanoes, river valleys vs. glacial valleys) and **describe** the *evidence* that one can use to *distinguish* between them.
5. **Analyze** *geologic features* observed during everyday life and **say something significant** about them, including being able to:
 - a. Use *diagnostic characteristics* to **identify** rocks in hand sample and **explain** the likely conditions during rock formation.
 - b. **Discuss** the *limitations* of visual observations in accurately classifying rocks.
6. **Compare and contrast** how *scientific inquiry and theory development* work in geology/geoscience versus other physical sciences.
7. **Appreciate** the *complexity* of the world surrounding us, and how geologic processes have shaped the society in which we live.
8. **Communicate** the above ideas to peers in the *scientific community*.

4. **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:

Tests and Assignments	Weight	Dates
Weekly Lab Assignments	25%	See the schedule posted on D2L
Lab Quizzes (3)	15%	See Lecture / Lab schedule posted on D2L
Lecture Midterm Exam	15%	Mon Oct 26 – Out-of-class (5.30-7:30pm); room TBA
Lab Final Exam	20%	Last week of classes (during scheduled lab periods)
Lecture Final Exam	25%	SCHEDULED BY THE REGISTRAR

-Students must achieve a minimum of 50% in **BOTH** the lab components and lecture components of the course to obtain a passing grade.

Top Hat: Students may opt out of Top Hat participation and add the 5% course credit to their final examination component; students wishing to opt out must inform Dr. Dolphin in writing before the end of first week of class (before 5 PM MST Friday, September 11, 2015).

Individual elements of the course (i.e. labs, exams) will be assigned a percentage score. Final percentage grades for the overall course will be calculated based on the grade weighting scheme indicated above and will be converted to letter grade as follows:

Letter Grade	Percent	Letter Grade	Percent
A+	95-100	C+	65-69
A	90-94	C	60-64
A-	85-89	C-	56-59
B+	80-84	D+	53-55
B	75-79	D	50-52
B-	70-74	F	0-49

5. **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.
6. **Scheduled out-of-class activities:** There will be a 1.5 hour lecture midterm exam held outside of the scheduled class time. This will occur on **Monday October 26 from 5.30-7:30 pm, in EDC 179, ST 141, 143 and 145. (Note exam is 1.5 hours; a 2 hour slot has been booked to factor in time for seating all the students)**

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.

7. **Course Materials:** *Earth: Portrait of a Planet* by Stephen Marshak (4th or 5th Ed); the 3rd Edition does not have all of the new features but it will allow you to follow the course topics well enough. The new edition of the book is available at the University of Calgary Bookstore, and at many web-based book sellers. At the W.W. Norton & Company Inc. website (<http://books.wwnorton.com/books/Earth/>), it is available as loose leaf 3-hole punched package and as an ebook* (these options are less expensive than the standard textbook price).

* **NOTE:** ebook uses Flash and cannot be viewed on the iPad, iPod Touch or iPhone and some android devices.

Other Resource Materials:

Four Billion Years and Counting: Canada's Geological Heritage by R. Fensome, G. Williams, A. Achab, J. Clague, D. Corrigan, J. Monger and G. Nowlan (Eds.). Produced by the Canadian Federation of Earth Sciences (<http://www.fbycbook.com/>) and contains an engaging exposition of the modern consensus on geological and geophysical theory within a Canadian Context. Note that this text should be considered as a *supplement* to the main course text above, and **not** as a replacement.

Lab Handouts and corresponding assignments are posted in advance on D2L.

Lab Audio Introductions are posted weekly on D2L, by Lab.

Lecture notes are posted in advance on D2L.

Selected online web resources will be posted on D2L.

8. **Examination Policy:** Closed Book. Non-programmable calculators allowed. Students should also read the Calendar, [Section G](#), on Examinations.
9. **Approved Mandatory and Optional Course Supplemental Fees:**
Students will need to purchase a mineral/rock identification tool kit on the first week of class. This can be purchased from their respective lab rooms during the first week of class for a price of \$10 (cash only). The purchase of the mineral/rock identification tool kit is non-refundable.
10. **Writing across the curriculum statement** 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 [Section E.2](#) of the University Calendar.

11. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **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
- (b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- (c) **Student Accommodations:** 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 http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.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, preferably in writing, to the Associate Head of Geoscience, Dr. E.S. Krebs by email krebs@ucalgary.ca or phone 403-220-5850.
- (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 SU Faculty Rep. Phone: 403 220-3913 Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca and science3@su.ucalgary.ca; Student Ombuds Office: 403-220-6420 Email: 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). Your responses make a difference – please participate in USRI Surveys.

Department Approval: ORIGINAL SIGNED

Date: September 18, 2015

Associate Dean's Approval for
out of regular class-time activity: ORIGINAL SIGNED

Date: September 21, 2015

Tentative Course Schedule for GLGY 201 – Fall 2015				
Week	Dates	Lecture Topic(s)	Lab	Text Chapter References
1	Sept 7-11	Introduction, Scientific Inquiry, Earth Structure - AD	Meet and Greet, Buy lab kit	<i>EPP5</i> : Pre, 1,2 <i>FBYC</i> : 1,5
2	Sept 14-18	Earth Materials: Minerals, Fossils, Rocks and the “Rock Cycle” -AD	Topographic Maps	<i>EPP5</i> : 5, Int A,C,E <i>FBYC</i> : 1
3	Sept 21-25	Igneous Rocks: Classification, Formation, Volcanism - AD	Earth Materials: Minerals and Fossils	<i>EPP5</i> : 6,9 <i>FBYC</i> : 1,17,19
4	Sept 28-Oct 2	Classification of Sedimentary Rocks - GD Classification and Formation of Metamorphic Rocks - GD	Textures and structures of rocks I	<i>EPP5</i> : 7,8, Int B <i>FBYC</i> : 1,3,4
5	Oct 5-9	Surficial Geology I - GD Surficial Geology II - GD	Textures and structures of rocks II	<i>EPP5</i> : 7,16,21,22, Int B,F <i>FBYC</i> : 1, 3-6, 16-17
6	Oct 14-16*	Sedimentary Environments - GD	Surficial Geology Quiz #1	<i>EPP5</i> : 7 <i>FBYC</i> : 1, 3-6, 16
7	Oct 19-23	Evolution, Geologic Time, Earth History - GD	Geologic Time	<i>EPP5</i> : 12,13, Int E <i>FBYC</i> : 3-4, 5-11, 20
8	Oct 26-30	Hydrology - AD Lecture Midterm exam: Mon Oct 26, 5:30-7:30pm	The Fossil Record	<i>EPP5</i> : 17-20, Int F <i>FBYC</i> : 1, 4, 15-18
9	Nov 2-6	Stress, Strain, Structural Geology I - BK	Structural Geology I Quiz #2	<i>EPP5</i> : 11,14,15, Int D <i>FBYC</i> : 1-2, 6
10	Nov 9**	Structural Geology II - BK	NO LAB	<i>EPP5</i> : 11,14,15, Int D <i>FBYC</i> : 9, 10, 13
11	Nov 16-20	Earthquakes: Causes, Locations, Measurements - BK	Structural Geology II Quiz #3	<i>EPP5</i> : 10, Int D <i>FBYC</i> : 1-2, 17
12	Nov 23-27	Tectonic Theory - BK	Review Lab	<i>EPP5</i> : 2-4,9-11, Int D <i>FBYC</i> : 2, 9-10, 20
13	Nov 30-Dec 4	Extraterrestrial Geology, Learning Assessment, Geoscience Research - BK	Final Lab Exam (Cumulative)	
14	Dec 7	Review – (All?)		

* No class on Oct. 12 (Thanksgiving)

**No class on Nov. 11-13 (Reading Break)

AD = Alex Dutchak, GD = Glenn Dolphin, BK = Brandon Karchewski

Note that the course schedule is tentative and subject to changes.