

Faculty of Science Course Syllabus (Section A)
Department of *Earth and Environmental Sciences*

ERTH / GEOG 3440
Geomorphology
Fall 2022

Instructor: Dr. Lawrence Plug, LJP@dal.ca or lawrence.plug@dal.ca (same box). Office hours noon to 1PM Mondays, 4613 LSC.

Teaching Assistant: Nina Golombek, nina.golombek@dal.ca. Office hours to be posted.

Lectures: Monday, 8:30 to 11:00 am

Laboratories and tutorials: This course does not have scheduled labs or tutorials. Assignments are lab-like in content but are completed at your own time and location using materials distributed on the course Brightspace site.

Course delivery: In-person lectures and exams, switching to asynchronous online lectures is necessary.

Description

Geomorphology is the quantitative study of Earth's surface processes and landforms with applications in geology, civil engineering, hydrogeology, and environmental management. We investigate slope stability, weathering and soils, sediment production, wind-driven and coastal environments, tectonic landforms, and river, glacial and permafrost processes.

Prerequisites and Necessary Competence

[ERTH 1080](#) (or [SCIE 1506.09/SCIE 1507.09](#)) and ([ERTH 1090.03](#) or [ERTH 1091.03](#)); AND completion of a 1000-level mathematics class, a 1000-level physics class, a 1000-level chemistry class.

You are expected to have a working knowledge of algebra, basic trigonometry, first-year geology, and a high level of competence in written English, sufficient to write 10page reports. Calculus may be used for the derivation of some of the algebraic expressions that are used in assignments; although you do not need to use calculus yourself in any assignments or exams, an understanding of integration and differentiation may be helpful to understanding course materials. A background in statics and dynamics at the level of a 1st year university physics course is highly recommended.

If you do not have this background, you are responsible for any remedial study necessary.

Exclusions

None

Learning Objectives

1. Identify, in the field and in topographic data, landforms produced by glacial, fluvial, hillslope, aeolian, coastal and periglacial processes.
2. Familiarity with a suite of geochronologic tools useful for determining the age and rates of formation of Cenozoic landforms.
3. Give descriptions, in some instances quantitative, of the processes that generate landforms
4. Independently produce technical reports in the discipline of geomorphology, that include text, graphs, topographic and other data.

Materials and Assignment Submission

Course slides, assignment materials, and required readings are posted on Brightspace. You must submit your assignments to a Brightspace dropbox as a Word .doc file by 5pm on the due date.

- You must have access to a computer with spreadsheet and drawing software at minimum (a Dal computer lab computer is sufficient). Ritter and Trenhaile textbooks are available through Killam 3h loan. These textbooks are supplementary, not required, but some students find them useful.

Assessment

The assignments, midterm exam, and final exam contribute to your final grade within the weighting range specified below. The weight for each of the 3 components will be automatically chosen after all of the course is complete, with weights set to give you the maximum possible grade.

Component	Weight (% of final grade)	Date
<i>Midterm (1.5 h)</i>	<i>15-25pts</i>	<i>Oct 31</i>
<i>Assignments (3, equally weighted)</i>	<i>30-60pts</i>	<i>Oct 21, Nov 18, Dec 12</i>
<i>Final exam (3 h cumulative)</i>	<i>25-50pts</i>	<i>Exam Period</i>

Other course requirements

- 1 **Exams** contain a mix of multiple choice, short answer, paragraph-answer, calculation, and graph-and-draw questions. Drawings and diagrams on tests, labs, and assignments must be completely labeled, legible, and precise. Points may be deducted for spelling, incomplete sentences (except where point form is specified) and other grammatical errors.
- 2 **The assignments** are lab-like in content but you complete them at your own time and place. Each assignment requires hands-on work and calculations followed by a write-up which is a high quality technical report, as though you (the student) are an employee or owner of a geoscience company that does applied geomorphology. Spelling, grammar, word usage, sentence structure and all other aspects of writing a coherent professional report in English are considered in grading these assignments.
- 3 **Accommodations:** Any student with a disability that may prevent him/her from fully demonstrating his/her abilities should contact the Dalhousie Student Accessibility Services office, and contact me personally at the beginning of the semester. We can discuss accommodations necessary to ensure full participation and educational opportunity.
- 4 Please feel free to consult with me or Nina during office hours or by appointment if you have questions, comments, or problems.

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	B+ (77-79)	C+ (65-69)	D	(50-54)
A (85-89)	B (73-76)	C (60-64)	F	(<50)
A- (80-84)	B- (70-72)	C- (55-59)		

Course Policies on Missed or Late Academic Requirements

Exams: There will be no make-up exams for the Midterm or Final exams unless you have a documented family or personal medical emergency. If you do have such an emergency, please try to contact me in advance of the exam and we will arrange a make-up at a later time that suits you and me. You must submit documentation to me (doctor note, etc) for a make-up to be arranged. I will not accept Student Declaration of Absence forms for missed exams. Missed exams receive a grade of 0.

Late Assignments: If you experience a short-term absence or illness that causes an assignment to be late by up to 5 days, you may use Dalhousie's Declaration of Absence form to receive an extension.

- contact me by email prior to the academic requirement deadline or scheduled time and;
- complete a Student Declaration of Absence form or provide alternate verification of the absence, and submit to me within three (3) calendar days following the last day of absence.
- A student may submit a maximum of one separate Student Declaration of Absence form for EARTH/GEOG3440 during a term. For more information and forms, see https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html
- There is no late penalty for late assignments if you follow this policy, up to a maximum of 5 days of extension.
- Outside of extensions given under the above Dalhousie Declaration of Absence regulation, the late policy for assignments is -5%/day including weekends.
- Assignments will not be accepted more than 10 days after the due-date.

Course Policies related to Academic Integrity

- Group Work: I encourage study groups for exam preparation, if this is helpful. It is also acceptable to work on the data-collection part of assignments in groups, but you must hand in your own work/answers. Identical or similar wording in reports will be treated as plagiarism. Identical or unexpectedly similar graphs and maps will be treated as unauthorized collaboration.
- The TA and I may use plagiarism-detection software (e.g., Urkund) to check assignments for plagiarism, comparing the text against other student's work in this and prior academic terms, and against published work.

Course Content

This schedule may be modified during the semester. Check BrightSpace frequently for updates.

Assignments will be posted as PDF and supporting data formats (jpeg, xls etc) on Brightspace.

WEEK	Topic and Notes	Assignments Out/In	Reading	Extra Info
Sept 12	Schedule and intro (60 minute class)			
Sept 19	Concepts/ Tectonic Geomorphology		Burbank and Anderson ch 2	Ritter 1-2 or Trenhaile 1-2.
Sept 26	Complete Tectonic Geomorph.	#1, Death Valley Assignment OUT	Burbank and Anderson ch 2 and ch. 10 Bull papers	
Oct 3	Dating Methods		Burbank and Anderson ch 3.	
Oct 10	THANKSGIVING. No class.		As above	
Oct 17	Finish Dating Methods, Start Slopes and Mass Movement	Death Valley DUE 5pm Oct 21.		Ritter 4 or Trenhaile 5
Oct 24	Slopes and Mass Movement	#2, Olancha Debris Flow Assignment OUT		
Oct 31	Midterm. 1.5h. No lecture.			
Nov 7	FALL STUDY BREAK			
Nov 14	Glacial Processes	Olancha DUE 5pm Nov 18.		Ritter 9,10 or Trenhaile 6,7
Nov 21	Glacial Landforms	Columbia Ice Field OUT		Ritter 11 or Trenhaile 9
Nov 28	Drainage Basins/Fluvial Geomorph.			
Dec 5	Rivers			Ritter 5-7 or Trenhaile 10,11
Dec 7 (Wed)	Periglacial Landforms	Columbia DUE 5pm Dec 12		
Dec 9-20	EXAM PERIOD. 3 hour cumulative exam held during this time. Registrar chooses time in October.			

Department of *Earth and Environmental Sciences**ERTH / GEOG 3440**Geomorphology**Fall 2022****Syllabus Part B and Part C*****University Policies and Statements**

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

Information: https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

Code: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness

Statement: <http://www.dal.ca/cultureofrespect.html>

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) (elders@dal.ca).

Information: https://www.dal.ca/campus_life/communities/indigenous.html

Important Dates in the Academic Year (including add/drop dates)

<https://academiccalendar.dal.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=117&chapterid=-1&topicgroupid=31821&loadusercredits=False>

University Grading Practices

https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Student Resources and Support

Advising

General Advising https://www.dal.ca/campus_life/academic-support/advising.html

Science Program Advisors: <https://www.dal.ca/faculty/science/current-students/undergrad-students/degree-planning.html>

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Black Students Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html

Academic supports

Library: <https://libraries.dal.ca/>

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Copyright Office: <https://libraries.dal.ca/services/copyright-office.html>

Fair Dealing Guidelines <https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

Other supports and services

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness.html

Student Advocacy: <https://dsu.ca/dsas>

Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

Safety

Biosafety: <https://www.dal.ca/dept/safety/programs-services/biosafety.html>

Chemical Safety: <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

Radiation Safety: <https://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

Scent-Free Program: <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>

Dalhousie COVID-19 information and updates: <https://www.dal.ca/covid-19-information-and-updates.html>