DALHOUSIE UNIVERSITY

Faculty of Science Course Syllabus
Department of Earth Sciences

ERTH/GEOG 3440
Geomorphology
Winter 2019

Instructor: Lawrence Plug, `ljp@dal.ca` , 4613 LSC, office hours Tu 10-11

TA: Kim Taylor, `ktaylor@stfx.ca`, office hours TBA

Lectures: 2:35-5:35 Monday afternoon, LSC B8007

Course 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.

Course Prerequisites

ERTH 1080 (or SCIE 1506/1507 or SCIE 1505) and (ERTH 1090 or ERTH 1091) or equivalent; completion of a 1000-level mathematics class, a 1000-level physics class, a 1000-level chemistry class OR permission of instructor.

Course Objectives/Learning Outcomes

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 determing 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.

Course Materials

Course slides, assignment materials, and required readings (journal articles) are posted on Brightspace. Ritter and Trenhaile textbooks are available through Killam 3h loan. These texts are supplementary, not required, but some students may find them useful.

Course Assessment

Assignments, midterm exam, and final exam contribute to your final grade, within the ranges specified below. The weighting for each of the 3 components is automatically chosen at the end of the semester to optimize your final grade.

Component	Weight (% of final grade)	Date
Tests/quizzes *Midterm, 1.5hours,*	*15-25pts*	*Feb 25*
Assignments *4 assignments*	*30-60pts*	*See class schedule*
Final exam, *3h cumulative*	*25-50pts*	*Scheduled by Registrar*

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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

1. **Exams** contain a mix of multiple choice, short answer, paragraph-answer, 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. Three of the four assigments require preparation of a high quality 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. **Group Work:** I encourage study groups for exam preparation, if this is helpful. It is also acceptable to work on assignments in groups but you must hand in your own work/answers. Identical or similar assignment reports will be treated as plagiarism; each individual must express answers in his/her own words. Some exam questions will closely resemble assignment questions; you will benefit at midterm and exam time if you independently complete and understand all assignments.
4. **Plagiarism**: "Dalhousie University defines plagiarism as the presentation of the work of another author in such a way as to give one's reader reason to think it to be one's own. Plagiarism is a form of academic fraud. Plagiarism is considered a serious academic offence which may lead to loss of credit, suspension or expulsion from the University, or even the revocation of a degree." (From Dalhousie web-site http://plagiarism.dal.ca). If there is any indication of plagiarism, University policy states that the instructor (me) must pass the case and all related documents over to the University-wide committee on plagiarism. I will do so. If you have any questions on what constitutes plagiarism, please carefully read the Dalhousie plagiarism web site which also includes useful tips on proper referencing. If you are still in doubt, ask me.
5. **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.
6. There will be **no make-up exams** for the Mid Term or Final examinations without documented family or personal medical emergencies.
7. Please feel free to consult with me during office hours or by appointment if you have questions, comments, or problems.
8. **Short Term Absences and Illness:** Following Dalhousie's Absence Regulation, students experiencing short-term absences of three (3) consecutive days or fewer resulting in missed or late academic requirements must
   - 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 forms for ERTH/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

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9 **Late policy for assignments**: Outside of the above Dalhousie Absence regulation, the late policy for assignments is -5%/day, including weekends.

For additional Dalhousie policies and services, see Part B on BrightSpace.

Schedule

This schedule may be modified during the semester. Check BrightSpace frequently for updates. Lecture graphics are posted on Brightspace before being presented in class. Assignments will be posted as PDF and supporting data formats (jpeg, xls etc) on Brightspace.

Date	Topic and Notes	Assignments Out/In	Reading	Extra Info
7 Jan	Schedule and intro (40 minute class)			
14 Jan	Concepts/Equilibrium/Energy flows Start Tectonic geomorphology		Burbank and Anderson ch 2	Ritter 1-2 or Trenhaile 1-2.
21 Jan	Tectonic geomorphology	Assignment 1 out	Burbank and Anderson ch 2 and ch. 10 Bull papers	
28 Jan	Complete Tectonic Geomorph. Dating Methods I		Burbank and Anderson ch 3.	
4 Feb	Dating Methods II	Assignment 2 out Assignment 1 due	As above	
11 Feb	Physical Weathering. Start Slopes. Mars gullies and polygons			Ritter 4 or Trenhaile 5
18 Feb	**Study Break.**			
25 Feb	Midterm. 1.5h	Assignment 2 due		
4 Mar	Slopes and mass movement	Assignment 3 out	Semanza, 2000	
11 Mar	Drainage Basins/Fluvial Geomorph.			Ritter 5-7 or Trenhaile 10,11
18 Mar	Glacial Processes			Ritter 9,10 or Trenhaile 6,7

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Date	Topic and Notes	Assignments Out/In	Reading	Extra Info
25 Mar	Glacial and Periglacial Landforms	Assignment 4 out Assignment 3 due		Ritter 11 or Trenhaile 9
1 Apr	Wrap up, review			
10-26 April	3 hour cumulative exam.	Assignment 4 due April 15		