

University of Toronto Scarborough
Department of Physical and Environmental Sciences
EESB02H3 S – Principles of Geomorphology
2022 Outline

Instructor: Mandy Meriano
Office: EV362 Telephone: 416-208-2775
Online office hours: Thursday: 10am – 12pm
Email: m.meriano@utoronto.ca

Lecture time: Monday 11am to 1pm
Location: MW160

Lecture on Monday September 12th, 11am-1pm will be Online (Synchronous):

[Join Zoom Meeting](#)
<https://utoronto.zoom.us/j/81732077539>
Meeting ID: 817 3207 7539
Passcode: 960073

Office hours: Thursday 10am-12pm
[Join Zoom Meeting](#)
<https://utoronto.zoom.us/j/87446291929>
Meeting ID: 874 4629 1929
Passcode: 005291

Notice of video recording and sharing (Download and re-use prohibited)

This course, including your participation, will be recorded on video and will be available to students in the course for viewing remotely and after each session.

Course videos and materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation, and are protected by copyright. Do not download, copy, or share any course or student materials or videos without the explicit permission of the instructor.

For questions about recording and use of videos in which you appear please contact your instructor.

Practical times: Wednesday 09:00 – 11:00; 11:00 –13:00; 13:00 – 15:00; 15:00 – 17:00

Location: EV224 (Chem and Env Sci Building) and computer lab (location TBA)
Field component of the practicals will be carried out in Highland Creek
Emphasis is placed on practical work in this course, which will involve some time commitment. However, this is reflected positively in your final grade.

Teaching Assistants: Sayuri Sagisaka Mendez, Cheng Peng
Office and office hours: TBA on Quercus
Lab coordinators: Chai Chen and Tom Meulendyk, EV304 and EV225

INDEX OF OUTLINE TOPICS

Course Textbook
Course Description
Learning objectives
Marking Scheme
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Absences, Missed Term Work, and Student Services
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TEXTBOOK: Bierman, P.R. and Montgomery, D.R. 2020. *Key Concepts in Geomorphology*, 2nd ed. W.H. Freeman and Company, New York, NY.

The course textbook is available from the UTSC Bookstore.

DESCRIPTION: The earth's surface form and its dynamic behavior at range of spatial and temporal scales is an integral part of the physical, biological and human environment. It is strongly influenced by human activity, while at the same time imposing severe constraints upon that activity. The study of the earth's surface forms and their morphodynamic behavior, both naturally and under the impact of human habitation, is the field of Geomorphology. It is the human interaction with the surface of the earth that gives rise to a number of environmental concerns: e.g., surface erosion, catastrophic floods, sea-level rise, landslides, water resources and water extraction, etc. This introductory course combines aspects of geology, climatology, hydrology, and soil science to present a coherent introduction to the surface of the Earth, with emphasis on both fundamental concepts and practical applications, as a basis for understanding and intelligent management of the Earth's physical and chemical environment.

LEARNING OBJECTIVES: By the end of the course students will have developed a coherent understanding of the various aspects of geology, climatology, hydrology, and soil science that shape the surface of the Earth, with emphasis on both fundamental concepts and practical applications, as a basis for understanding and intelligent management of the Earth's physical and chemical environment.

MARKING SCHEME (tentative): Four practicals; value 40% (4 x 10%); a midterm exam: value 25%; and a final exam: value 35%.

Evaluation Components	% Grade	Key Dates and Deadlines
Practical 1	10	Sep 14 (EV-224) & Sep 21 (BV-TBA); Due Sep 28
Practical 2	10	Sep 28 (EV-224); Due Oct 19
Practical 3	10	Oct 19 (Highland Ck); Due Nov 09
Practical 4	10	Nov 09 (EV-224); Due Nov 30
Flume Lab Demonstration		Nov 23 (EV-224)
*Midterm Exam	25	Oct 24 , In-class
**Final Exam	35	TBA
Total Grade Possible	100	

*The *midterm exam* is based on material covered in lectures and readings up to and including the class before the midterm exam. Readings will be from your course textbook: Bierman and Montgomery (2020). The format is multiple choice and short answer questions.

**The *final exam* will be based on all term material (including readings and lectures). Readings will be from your course textbook: Bierman and Montgomery (2020). The format is multiple choice and short answer questions.

TENTATIVE LECTURES

- Week 1: September 12** Earth's Dynamic Surface
Textbook readings: Ch 1
- Week 2: September 19** Earth's Solid Materials and Weathering
Textbook readings: Ch 5,6
- Week 3: September 26** Topography: Channels and Drainage Basins
Textbook readings: Ch 3
- Week 4: October 03** Geomorphic Hydrology (Part I)
Textbook readings: Ch 4,8,9
- **October 10** *Reading Week*
- Week 5: October 17** Geomorphic Hydrology (Part II)
Textbook readings: Ch 4,8,9
- Week 6: October 24** *Mid-term exam held during class time*
- Week 7: October 31** Groundwater
Textbook readings: Ch 4
- Week 8: November 07** Glaciers
Textbook readings: Ch 13

- Week 9: November 14** Landscape Evolution
Textbook readings: Ch 2, 12, 15, 16
- Week 10: November 21** Coastal Geomorphology
Textbook readings: Ch 10
- Week 11: November 28** Deserts: Wind as a Geomorphic Agent
Textbook readings: Ch 11
- Week 12: Dec 05** TBA (generally some lectures run into a 2nd week – this lecture time will allow us to fully complete all the above noted topics)

PLAGIARISM: Assignments are checked for plagiarism. Please consult the University Calendar for a discussion and outline of the policy on plagiarism and academic integrity (also see proceeding section below). The sanctions can be severe. If, after reviewing the University policy, you are uncertain about what constitutes plagiarism, talk to your course instructor.

ACADAMIC INTEGRITY: Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

- Using or possessing unauthorized aids.
- Looking at someone else's answers during an exam or test.
- Misrepresenting your identity.

In academic work:

- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see <http://www.utoronto.ca/academicintegrity/>).

Please consult the University Calendar for information about grade distribution and academic conduct.

ABSENCES: If you need to miss a practical or term test for any legitimate reason, you must submit appropriate documentation within **three** business days of your absence. If the reason for your absence is medical, an official UTSC medical note must be completed by a doctor who examined you while you were ill/injured (i.e. not after the fact). The medical note can be downloaded at:

http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf. Note that conditions ranked as mild or negligible will not be considered a valid excuse.

MISSED TERM WORK: If a legitimate reason prevents you from submitting a piece of term work by its posted deadline, you must submit appropriate documentation within **three** business days of your absence. If the reason is medical, an official UTSC medical note must be completed by a doctor who examined you while you were ill/injured (i.e. not after the fact). The medical note can be downloaded at:

http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf. Note that conditions ranked as mild or negligible will not be considered a valid excuse.

HANDING IN ASSIGNMENT: You are responsible for making sure that your TA receives your work. Students who mail assignments in, place work on the floor outside an office, or slip assignments under a door, do so at their own risk.

LOST OR MISPLACED ASSIGNMENT: It is your responsibility to keep a photocopy of your work, and to make more than one copy of your work. Excuses are not accepted in the case of lost or misplaced work.

LATE ASSIGNMENTS: The penalty for late submission is 10% per day.

ACCESSABILITY: Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodation, please feel free to approach me and/or the *AccessAbility* Services Office as soon as possible. I will work with you and *AccessAbility* Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC *AccessAbility* Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or ability@utsc.utoronto.ca.

Students are encouraged to review the Calendar for information regarding all services available on campus.

List of references for concepts, information, data, figures, and text used in the course:

Allen, P.A. 1997, *Earth Surface Processes*. Blackwell Science, pp.404

Benn, D.I., and Evans, D.J.A. 1998, *Glaciers and Glaciation*. London, UK, Arnold, pp.734

Bierman, P.R. and Montgomery, D.R. 2014. *Key Concepts in Geomorphology*, W.H. Freeman and Company, New York, NY. pp.494

Bierman, P.R. and Montgomery, D.R. 2020. *Key Concepts in Geomorphology*, 2nd ed. W.H. Freeman and Company, New York, NY.

Bloom, A.L. 1998. *Geomorphology; A Systematic Analysis of Late Cenozoic Landforms*, 3rd ed. Prentice Hall, pp.482

Easterbrook, D.J., 1999. *Surface processes and landforms*, 2nd ed. Prentice-Hall, Inc., New Jersey, 546pp.

Flint, R.F. 1971, *Glacial and Quaternary Geology*. Wiley, pp.892

Google Earth™ (<http://www.google.com/earth/>)

Leopold, L.B. 1994, *A View of the River*, Harvard University Press, Cambridge, MA, pp.298

Leopold, L.B., Wolman, M.G., and Miller, J.P. 1964, *Fluvial Processes in Geomorphology*. Freeman, pp.522

Meriano, M., Published and unpublished research work

MIT OpenCourseWare (<http://ocw.mit.edu>; <http://ocw.mit.edu/terms/#cc>)

Strahler, A.N., 1975, *Physical Geography*, 4th ed. Wiley, pp.643

Sugden, D.E., and John, B.S. 1976, *Glaciers and Landscape*. London, Edward Arnold Ltd., pp.376

Taylor, G., and Eggleton, R.A. 2001, *Regolith Geology and Geomorphology*. Wiley, pp.375

Thornbury, W.D. 1969, *Geomorphology*, 2nd ed. Wiley, pp.594

Trenhaile, A.S. 2010. *Geomorphology A Canadian Perspective*, 4th ed. Oxford University Press, Don Mills, Ontario. pp.558

Trenhaile, A.S. 2013. *Geomorphology A Canadian Perspective*, 5th ed. Oxford University Press, Don Mills, Ontario. pp.575