

DEPARTMENT OF GEOGRAPHY
University of Toronto
COURSE OUTLINE
2014-2015

COURSE: GGR 201S - Geomorphology

INSTRUCTOR: Roger Phillips
Office: Earth Sciences 2124 **Office Hours:** Tuesdays by appointment
22 Russell Street, Toronto
Email: roger.phillips@utoronto.ca

TEACHING ASSISTANTS:

Serra Buchanan Anna Phillips
Email: serrawillow.buchanan@mail.utoronto.ca **Email:** anna.phillips@mail.utoronto.ca

Course Website on Blackboard – Available January 2015; login at:
<http://portal.utoronto.ca>

Recommended Preparation: GGR100H

Lectures: Tuesdays, 6-8; SSH 2106

Laboratory: T8; W10; W11; W4, W5 in Earth Sciences 2119 (or Physical Geography Building, PGB)
(with six formal 1 hour laboratory sessions and one GoogleEarth workshop during the term)

Course Structure: A one term course with lectures and six laboratory sessions, including six short assignments. A field trip will be scheduled for March, including a field trip report. An alternative assignment may be offered for students unable to attend the field trip.

Required Text: *Key Concepts in Geomorphology* 2013. W.H. Freeman & Co (MacMillan), 500 p. by **Paul R. Bierman and David R. Montgomery**

Objectives:

- (a) To introduce the basics of earth surface landforms and processes;
- (b) To introduce techniques used in the interpretation and analysis of earth surface features;
- (c) To introduce major concepts regarding landscape development and human impacts on the physical landscape.

Geomorphology is an "interface" science involving the lithosphere, atmosphere, hydrosphere and biosphere. It is an integral part of both physical geography and physical geology, and it embraces a study of the internal and external forces that shape the configuration of the earth's surface. The internal forces are related to tectonism and volcanism, whereas the external forces are related to the action of weathering, soil formation, mass wasting, river flow, ice movement, and to the action of wind, waves and subsurface water. Human activity is an important component of landform development. The prime goal of geomorphology is an understanding of landforms created by the interaction of these forces and human modifications. Geomorphology has many applications in physical and environmental sciences.

PROGRAMME:

- (1) **Lectures:** A detailed outline will be distributed at the first class (see basic outline below).
- (2) **Laboratories:** There will be six laboratory exercises during the term and one GoogleEarth workshop (see basic schedule below). Collaborative effort in working out assignments is encouraged although individual reports must be submitted. Carefully read the “Lab Guide to GGR 201S” for preparation.
- (3) **Field Trip:** If weather permits, there will be a full-day field trip during the term to investigate selected geomorphological sites. The trip will take place on a Saturday (or a Sunday). A fee of \$20 dollars will be required to cover transportation costs.
- (4) **Examinations:** There will be a 50 minute mid-term test given during the lecture period and a three-hour (3 hr) final exam held at the end of term.

Evaluation:	Laboratory Exercises (6 x 5%)	30%
	Mid-term Test	20%
	Field Trip Report	10%
	Final Exam	<u>40%</u>
		100%

Assignment Submission: It is expected that assignments will be completed within one week after distribution, submitted in person at the beginning of the next lab session; however, please see detailed schedule for due dates. Electronic submissions will NOT be accepted. Late assignments may be submitted to the assignment drop box in the Earth Sciences department (ESC Room 1066, weekdays 9am-5pm) and will not be penalized until after noon Friday of the week the assignment is due. After the grace period, late assignments will be penalized 5% per day and will not be accepted after assignments have been returned. Further details are given in "Lab Guide to GGR201S" distributed in class.

Course Lecture Schedule (2015)

- January 6 – Introduction to geomorphology and geoscience
January 13 – Forces and earth structure
January 20 – Weathering and karst landscapes
January 27 – Hillslope form and processes
February 3 – Fluvial processes
February 10 – Fluvial landforms
February 24 – **Mid-term test**, Aeolian landforms
March 3 – Aeolian processes and coastal geomorphology
March 10 – Glacial processes and landforms
March 17 – Glacial landforms and ice ages
March 24 – Tools in geomorphology
March 31 – Geomorphology: scientific philosophy and application
April 8-30 – **University Final Examination Period**

Assignment Schedule (2015) – (Start dates in brackets)

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| Lab 1 – Maps and Google Earth (Jan 13-14) | Lab 4 – Fluvial (Feb 10-11) |
| Google Earth Workshop (Jan 20-21) | Lab 5 – Aeolian (March 3-4) |
| Lab 2 – Hillslopes I (Jan 27-28) | Lab 6 – Glacial (March 10-11) |
| Lab 3 – Hillslopes II (Feb 3-4) | Field Trip Report (March 21) |

Note: GGR201S – Geomorphology is an accepted course contributing to registration in the *Association of Geoscientists of Ontario (APGO)* under “Foundation or Core Geosciences” minimum knowledge requirements. For more information, students in earth sciences and physical geography should visit: <http://www.apgo.net/> .