Course Coordinator | Dr. Melissa Lafrenière | Email: Melissa.lafreniere@queensu.ca
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Office | D124 Macintosh-Corry Hall | Phone: 613-533-6000 xtn 78720
Contact Time | Three 1 hour lectures, 3 practical hours per week | 
Format | Lectures, laboratory and practical assignments based on field, map, and airphoto analyses |
Class Assessment | In-class Quizzes | 20% | 2 Quizzes (Weeks 5-8)
Laboratory and Practical Assignments | 45% | 5 assignments Weeks 3-11
Final Exam | 35% | Exam period

**COURSE OVERVIEW**

Geomorphology involves the study of the materials, forces and processes that shape the earth's surface. Earth surface materials (minerals and rocks) are derived at depth in the earth's crust, with structures resulting from tectonic activity, volcanism or burial. Surface materials may then be broken down further and/or rearranged by gravity and fluid media driven by solar and gravitational energy. Pedology involves the study of the development, composition, and structure of soils, that result from the break down of rocks at the surface by weathering. Students are introduced to the chemical and physical nature of the materials that makeup the earth's surface, and the variety of processes that govern the movement, deposition, shaping, and breakdown of these materials. The labs are designed to enhance the students’ ability to recognize landforms using aerial photographs and topographic maps, and to interpret and analyse the processes responsible for the different landforms. These assignments provide students an opportunity to enhance their technical, numerical, and writing skills; and require the use of spreadsheets, word processing and problem solving skills.

**LEARNING OUTCOMES**

- To enable students to understand that processes that shape the earth’s surface.
- To teach students how to identify landforms, soils, and sedimentary structures and use their understanding of process to explain their genesis.
- To introduce techniques used in the interpretation and analysis of earth surface features
- To highlight the importance of geomorphology and pedology in physical geography and environmental earth sciences.

**COURSE TOPICS**

Geomorphic systems, feedback and equilibrium; chemical and physical weathering processes; soil forming processes and soil orders of the Canadian Soil Classification System, tectonic and volcanic processes and landforms, mass wasting processes and landforms, fluvial processes and landforms, glacial processes and landforms.

**SELECTED COURSE TEXTS & READINGS**

The third and fourth editions of this text are also acceptable.

Supplementary Readings on reserve at Douglas Library

Rocks, Weathering and Soils:

Volcanic and Tectonic Processes and Landforms:
Easterbrook (1999) Surface processes and landforms Upper Saddle River, N,J, Chapters 8, 9, 10, and 11).