

| CAPILANO UNIVERSITY COURSE OUTLINES | | | |
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| TERM: | Spring 2014 | COURSE NO: | GEOG 212 |
| INSTRUCTOR: | | COURSE NAME: GEOMORPHOLOGY: LANDFORMS AND THE PROCESSES THAT SHAPE THEM | |
| OFFICE: | LOCAL: | SECTION NO(S): | CREDITS: 3 |
| E-MAIL: | | | |

COURSE FORMAT:

Three instructional hours plus two lab hours, and an additional hour delivered through other activities, per week for 15 weeks. This includes two weeks for final exams.

COURSE PREREQUISITES:

GEOG 112 or GEOL 110 or PHYS 114, OR PHYS 111 as a pre- or co-requisite.

COURSE DESCRIPTION:

The subject of Geography 212 is Geomorphology: the study of landforms and the processes that shape them. Landforms range in scale from the tiniest ripples on a sandy beach to the majestic mountain ranges that span continents. They form through the interaction of tectonic processes and gradational processes. Tectonic processes are driven by the internal energy of the Earth; these processes tend to build up the landscape. Gradational processes, on the other hand, operate at the Earth's surface and arise from the force of gravity along with forces created by moving water, ice, and air. Gradational processes tend to wear down the landscape. Resisting these driving forces is the strength of the rock or sediment upon which they act. Also important in landform development is the amount of time over which the processes have been acting. Ultimately, an infinite variety of landforms is the result.

Labs are an important part of the course as they allow students to *apply* much of the course content. They will involve computations and graphing. In addition, students will be using topographic maps and air photographs, both of which are indispensable tools in landform analysis.

COURSE STUDENT LEARNING OUTCOMES:

Upon successful completion of the course a student should be able to:

- understand that landforms result from the interaction of tectonic and gradational processes, the resistance of rocks and sediment, and time.
- apply math and physics in explaining landform development.
- appreciate the use of topographic maps, air photos, and field work in the study of landforms.
- realize that human actions play a role in landform development.
- answer the following questions:
 - How do landforms change?
 - Why is there an endless variety of landforms?
 - Does scale influence process?

REQUIRED TEXTS:

Trenhaile, Alan S. Geomorphology - A Canadian Perspective. 4th ed. Canada: Oxford University Press, 2010.

COURSE CONTENT:

- Week 1 **Introduction to Geomorphology**
Chapter 1
- Week 2 **Driving and Resisting Forces: Geomorphic Processes and Materials**
Chapter 2
- Week 3 **Weathering of Rock: Physical, Chemical, and Biological**
Chapter 4, pp. 93 - 112
- Week 4 **Slope Processes: Overland Flow, Mass Movement, Slope Profiles**
Chapter 5
- Week 5 **Stream Channel Processes: Stream Flow, Sediment Transport, Erosion and Deposition in Streams**
Chapter 10
- QUIZ**
- Week 6 **Stream Channel Processes, cont.**
Landforms Produced by Running Water: Channel Forms, Channel Patterns, Floodplains, Terraces, Fans, Deltas
Chapter 11
- Week 7 **Landforms Produced by Running Water, cont.**
MIDTERM EXAM
- Week 8 **Glacial Processes: Mass Balance, Glacier Movement, Glacial Erosion and Deposition**
Chapter 6
- Week 9 **Glacial Sediments and Landforms: Till, Moraines, Streamlined Features, Landforms created by Melt Water, Erosional Features**
Chapter 7
- Week 10 **Coastal Processes: Waves, Changes in Sea Level**
Chapter 12
- Week 11 **Coastal Landforms: Beaches, Sea Cliffs**
Chapter 13

Course content – continued

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| Week 12 | Aeolian Processes and Landforms |
| | Chapter 15 |
| Week 13 | Aeolian Processes and Landforms, cont. |
| Week 14 - 15 | FINAL EXAM PERIOD |

EVALUATION PROFILE:

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|-----------------|------------|
| Quiz | 10% |
| Labs | 20% |
| Term Assignment | 20% |
| Midterm Exam | 25% |
| Final Exam | <u>25%</u> |
| | 100% |

The lab portion of this course includes the labs and the term assignment. A passing grade (50% or more) is required on the lab portion of the course for the student to obtain a passing grade for the entire course.

GRADING PROFILE:

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|----------------|---------------|---------------|--------------|
| A+ = 90 - 100% | B+ = 77 - 79% | C+ = 67 - 69% | D = 50 - 59% |
| A = 85 - 89 | B = 73 - 76 | C = 63 - 66 | F = 0 - 49 |
| A- = 80 - 84 | B- = 70 - 72 | C- = 60 - 62 | |

OPERATIONAL DETAILS:

Capilano University has policies on Academic Appeals (including appeal of final grades), Student Conduct, Cheating and Plagiarism, Academic Probation and other educational issues. These and other policies are available on the University website.

Office Hours:

TBA

Fourth Hour:

Each student will meet with the instructor, individually and by appointment, to plan the student's term project.

Materials needed for class:

- pencil
- eraser
- a few coloured pencils
- 12"/30 cm ruler
- calculator

Attendance:

Regular attendance is highly recommended.

Operational details – continued

Responsibility for Material covered during a missed class:

When students are absent from class, they are still responsible for the material covered during their absence, including announcements, assigned readings, hand-outs, and labs. Some of the lab assignments will require the use of equipment which will not be available outside the scheduled lab hours.

Late Assignments:

For every day that an assignment is late 10% of the total possible points will be deducted.

Missed Exams:

Students who are unable to write the exams must have an acceptable excuse and are expected to contact the instructor before the exam. The exam must be completed as soon as possible after returning to class.

Study Time:

Because this course has a two-hour lab component, the amount of required study time will be greater than a regular three-credit course. Additional study time may be also required if a student's background in math and science needs to be reviewed or upgraded. Help is available through the Math Learning Centre (BR 289).

Incomplete Grades:

Grades of Incomplete "I" will be granted only if there is a valid reason for extending the evaluation deadline and if the student has a reasonable chance of improving their grade to pass the course.

English Usage:

All written work submitted must use good academic English and follow the guidelines provided in the *Capilano University Guide to Writing Assignments* (available from the University Bookstore).

Cheating/Plagiarism:

Plagiarism is the presentation of another person's work or ideas as if they were one's own. Plagiarism is both dishonest and a rejection of the principles of scholarship. Information about how to avoid plagiarism by proper documentation of sources is available from the Library and the Writing Centre. All students should familiarize themselves with the *University Policy on Cheating and Plagiarism* (See the *University Calendar*) as such behaviour can result in suspension from the University.

Electronic Devices:

During all classes, turn off cell phones and pagers and remove them from the desk. No personal electronic devices (cell phones, pagers, calculators, electronic dictionaries, etc.) may be used during an examination without prior approval from the instructor.

Emergency Procedures:

Please read the emergency procedures posted on the wall of the classroom.