

	<p><i>School of Arts &amp; Science</i>  <b>SOCIAL SCIENCES DEPARTMENT</b></p> <p><b>ENVR 207</b>  <b>Applied Geomorphology</b>  <b>Fall, 2011</b></p>
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**COURSE OUTLINE**

**1. Course Description**

Geomorphology is the study of landforms and the processes that shape them. This course will introduce students to land formation, weathering, and the processes, landforms and sediment properties associated with geomorphic agents such as gravity, water and ice. There will be a local and regional emphasis. Through lab and field-based activities, students will learn a range of applied geomorphological skills.

I encourage participation and discussion in class. My goal is to have you think and understand, so please speak up if you are confused! Group work is encouraged, and you should help each other learn. This does not mean you can copy! Each student must do their own individual assignment reports. Also beware of plagiarism in written reports and presentations; for details on plagiarism and Camosun's academic dishonesty policies, see [camosun.ca/learn/calendar/current/pdf/academic.pdf](http://camosun.ca/learn/calendar/current/pdf/academic.pdf). In cases of copying or plagiarism, all students involved will get a mark of zero on that assignment.

**Note: The official Approved Course Description is available on the web at <http://www.camosun.bc.ca/calendar/current/web/envr.html#ENVR207>**

- *Please note: this outline will be electronically stored for five (5) years only. It is strongly recommended students keep this outline for your records.*

**2. Instructor Information**

Instructor:	Chris Ayles
Office Hours:	Mon.-Fri. 12:30 – 1:30. Other times available by chance or appointment.
Location:	Fisher 342C
Phone:	370-3393
Email:	cayles@camosun.bc.ca
Website:	faculty.camosun.ca/chrisayles

**3. Intended Learning Outcomes**

At the end of this course, students will be able to:

1. Describe the major mechanisms of initial land formation.
2. Identify the physical processes and landforms associated with geomorphic agents such as gravity, water and ice.
3. Describe the Quaternary landscape history of southwestern BC.
4. Use a variety of tools and assessment methods common to geomorphological investigations.
5. Carry out a field-based geomorphological project, data collection, analysis and reporting.
6. Interpret sedimentary deposits.

#### 4. Course Materials

There is no single textbook for this course. Required readings will come from several sources, all of which are available in the bookstore or on reserve in the library...

(a)	Texts	<p><u>Optional:</u> Christopherson, R.W. and M. Byrne, 2009. <i>Geosystems, 2<sup>nd</sup> Canadian Edition</i>. Toronto: Pearson Education Canada, 709 pp. plus appendices.</p> <ul style="list-style-type: none"> <li>Older versions are around, but ultimately you are responsible for the material from the new edition.</li> </ul> <p><u>Optional:</u> Trenhaile, A.S., 2010. <i>Geomorphology: A Canadian Perspective, 4<sup>th</sup> Edition</i>. Don Mills, ON: Oxford University Press Canada, 558 pp.</p> <ul style="list-style-type: none"> <li>All four editions can be found in the library.</li> </ul> <p><u>Optional:</u> Yorath, C.J., 2005. <i>The Geology of Southern Vancouver Island, Revised Edition</i>. Madeira Park, BC: Harbour Publishing, 205 pp.</p> <ul style="list-style-type: none"> <li>This can be found at Camosun and most other local bookstores.</li> </ul>
(b)	Other	<p><u>Required:</u> ENVR 207 Lab Manual.</p>

#### 5. Course Format

- Lectures:** Lectures run from 1:30 to 3:20 on Wednesdays; they will provide the theory you need to understand the labs and pass the final exam, so attendance is essential. I use PowerPoint, and I will post basic lecture outlines on my web site: [faculty.camosun.ca/chrisayles](http://faculty.camosun.ca/chrisayles). These outlines are pretty sparse, and no substitute for coming to class!
- Readings** are an essential part of this course – they provide depth and context that are indispensable to a full understanding of the course material. Specific reading assignments are detailed below; these may be modified as the term goes on.
- Labs:** Labs run from 9:30 to 12:20 or 1:30 to 4:20 on Mondays. **You must buy a lab manual at the bookstore!** Please come to your registered lab time.

On regular lab days, bring pencils, paper, graph paper, calculator, ruler and protractor. Students will be expected to complete and hand in individual lab reports, though cooperation is encouraged.

Four of our labs are field-based, and two of these are to be completed in small groups. This means you get each other's help, and you can hand in a single group report. On the downside, you will have to divide the job, arrange meetings, review each other's work, and compromise. This can be fun, or a pain, but either way it is an important skill. If you are having problems with your partners, try to work it out. If you can't, come see me and I will try to help find a solution.

On field days, the bus will leave at 9:30 and 1:30 sharp, so don't be late unless you have made alternate arrangements with me. On field days, students are responsible for bringing: waterproof field notebook, snacks, water, rain and cold gear, camera (ET, AV or own), sturdy footwear, ruler and pencils. Don't break the field gear – it costs a lot!

Lab performance will be evaluated based on thoroughness, neatness, accuracy, participation and, occasionally, writing quality. Attendance during the lab time is mandatory, as these labs are gear-intensive and hard to reschedule. Labs will generally be due the following week, and will not be accepted at all after I have returned them marked. Late reports may be penalized 10% per day.

- **Pet landform presentation:** In trios, students will be expected to research the properties and origin of a local landform of their choosing, and present their findings to the class in one of the final two lab sessions. Details are provided in a separate handout.
- **Exam:** There is no midterm, but there is a cumulative final exam. The format will be a combination of multiple choice, short answer and lab-style questions. They mainly will emphasize the lecture material, though lab material will also be drawn upon.
- **Illness, etc.:** If you miss a lab or exam due to illness or some other serious reason, I must ask you to provide a doctor's note or other documentation to support your story. Otherwise, a mark of zero for the missed assignment will be given. Exams and field trips are hard to reschedule, so try not to miss them unless you are too sick to perform at a normal level.

Students who miss a lab or exam for a valid reason must contact me within 24 hours with an explanation. In such cases, one makeup exam time will be scheduled, and all students needing it will be expected to attend.

## 6. Basis of Student Assessment

Evaluation will be based on accuracy, thoroughness, and neatness. As a general rule, always show your work and keep track of units of measure! When I grade your work, I am looking for proof of your understanding, so do everything clearly and carefully – that way you may get partial credit, even for wrong answers. I endeavour to mark things fairly and consistently, but if you have a question about my assessment, feel free to come to my office and ask about it.

(a)	Labs	Lab 1                    6% Labs 2, 3, 5, 6, 7, 8, 9   4% <u>Lab 4</u> 12% TOTAL                      46%
(b)	Pet Landform Presentation	14%
(c)	Final exam	40%

**7. COURSE SCHEDULE** (Subject to change at instructor's discretion):

**NOTE:** Field-based lab locations are shown in **bold**; come prepared! Contact me ahead of time if you don't plan to travel with the class.

<b>Week</b>	<b>Monday (labs)</b>	<b>Wednesday (lecture)</b>
5-Sep	<i>No lab</i>	Course Intro / Initial Landforms
12-Sep	Lab 1: Surveying <b>(Lansdowne campus)</b>	Rivers 1
19-Sep	Lab 2: Surface hydrology	Rivers 2
26-Sep	Lab 3: Fluvial landforms	Coasts
3-Oct	Lab 4: Coastal erosion project <b>(Dallas Road)</b>	Slopes 1
10-Oct	<i>No lab</i>	Slopes 2
17-Oct	Lab 5: Slope stability	Glaciers 1
24-Oct	Lab 6: Glacial processes and landforms	Glaciers 2
31-Oct	Lab 7: Local glacial landforms <b>(Mt. Tolmie, Island View Beach)</b>	Terrain classification
7-Nov	Lab 8: Terrain classification	Periglacial landscapes
14-Nov	Lab 9: Terrain map validation <b>(Interurban campus)</b>	River regulation and dam removal
21-Nov	<i>No lab</i>	<i>No class</i>
28-Nov	Pet landform presentations	Guest lecture - Mike Miles
5-Dec	Pet landform presentations	Review for final exam

Exam Week: Final Exam.

## 8. READING LIST

<i>Week of:</i>	<i>Required Reading</i>	<i>Comments</i>
Sep. 5	Trenhaile pp. 26-41	Overview of earth structure and initial land formation processes. For more detail, wait for GEOS 100, or see Christopherson Ch. 11-12 ( <u>optional</u> ). <u>Optional</u> but interesting: Trenhaile Ch. 3 (geological formation of Canada).
Sep. 12	Christopherson Ch. 14.	Rivers and fluvial landforms. <u>Optional</u> : Trenhaile Ch. 10-11 (more advanced).
Sep. 19	Article by M. Church, 1992.	A more sophisticated overview of channel morphology, written for environmental professionals. Don't get hung up on the details, just read.
Sep. 26	Christopherson Ch. 16.	Coastal processes and landforms. <u>Note</u> : You may want to peruse the Thurber Consultants report (on reserve) before lab next week.
Oct. 3	Trenhaile pp. 93-108,127-130.	Weathering and slope erosion by runoff. No need to memorize the chemical reactions.
Oct. 10	Trenhaile pp. 130-158.	Mass wasting.
Oct. 17	Christopherson Ch. 17.	Glacial processes and landforms. You can skip the periglacial section. <u>Optional</u> : Trenhaile Ch. 6-7 are more thorough. Trenhaile Ch. 8 is a fascinating but detailed glacial history of Canada.
Oct. 24	Yorath (2005) sections on Mt. Doug and Island View Beach.	Read before next Tuesday's glacial driving tour lab. <u>Optional</u> : I have some good glacial history articles by John Clague and Carl Halstead; if you are keen, ask me for them.
Oct. 31	Terrain Classification manual.	Skim before class if possible, certainly before next Tuesday's lab. Copies will be on reserve, or view online at: <a href="http://ilmbwww.gov.bc.ca/risc/pubs/teecolo/terclass/cove1.htm">ilmbwww.gov.bc.ca/risc/pubs/teecolo/terclass/cove1.htm</a> .
Nov. 7	Christopherson pp. 570-576.	Periglacial processes and landforms - could be useful if you ever work up north. <u>Optional</u> : more detail can be found in Trenhaile ch. 9.
Nov. 14	None.	I will put an <u>optional</u> dam removal article by Hart et al. (2002) on reserve.
Nov. 21	None.	Focus on your pet landform project.
Nov. 28	None.	Focus on your pet landform project.
Dec. 5	None.	Catch up on readings and start reviewing for final exam.

## 9. Grading System

### Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

### Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at [camosun.ca](http://camosun.ca) or information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

## 10. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

### LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services or the College web site at [camosun.ca](http://camosun.ca).

### STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services and on the College web site in the Policy Section.