

LITHOSPHERE AND HYDROSPHERE

Course Outline, Winter 2005

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COURSE DESCRIPTION

This course will provide students with a first exposure to two major fields of physical geography: geomorphology and hydrology. The material is primarily theoretical, but a substantial lab component will introduce practical skills relevant to these subjects. Topics will include earth structure, plate tectonics and associated initial landforms, the hydrologic cycle, groundwater, soil water balance, weathering, and the major processes and landforms related to the geomorphic agents of gravity, water, ice and wind.

GENERAL POLICIES

My classes tend to be quite informal, and I encourage participation and discussion. My goal is to have you think and understand, so speak up if you are confused! Still, I take the material seriously and expect you to do the same. Group work is encouraged, and you should help each other learn. But this does not mean you can copy! Each student must do their own individual assignment reports, and if I catch people copying, all parties involved will get a mark of zero.

COURSE CONTENT

Lectures: This class has two three-hour blocks on Tuesdays and Fridays. Usually, these will be evenly split between lecture and lab time. Lectures will generally provide the theory you need to understand the labs and pass the tests, so attendance is strongly suggested. I mostly use PowerPoint, and I will post the basic class notes on my web site: www.camosun.bc.ca/schools/artsci/envirotech/ayles.php. Note, however, that these notes are no substitute for regular class attendance. Past experience shows that students who skip class get worse grades!

One non-lab field trip is planned. Transportation will be provided, and attendance is strongly suggested. We may run a bit late on this day.

Labs: There are twelve labs in this class, which I will hand out as the term proceeds. You generally will be given roughly three hours of class time, either as a block or split over two days, to work on these. For labs, you may work in groups, but each student must write their own individual answers unless instructed otherwise. Attendance of labs is strongly suggested, and in some cases mandatory. Labs are usually due the following period, and I reserve the right to impose a 10% per day penalty on late assignments. Late assignments will not be accepted after I have returned them marked.

Two labs will be based on local field trips – for these days, transportation logistics will be arranged ahead of time in class. It is your responsibility to be aware of the plan! Make sure you bring warm clothing and rain gear to appease the weather gods. Snacks, water and sturdy footwear are also advised. On regular lab days, you should bring pencils, paper, graph paper, calculator and ruler.

Exams: There will be one midterm and a final exam. The format for these will be a combination of multiple choice, short answer and long answer questions. They will emphasize the lecture material, though lab material will also be drawn upon. The final will be cumulative, though material from the second half of the course will be more heavily weighted.

READING

Readings are an essential part of this course – they provide depth and context that are indispensable to your understanding of the course material, and they will be tested. The required text for this course is:

Christopherson, R.W., 2002. *Geosystems – An Introduction to Physical Geography, 5th Edition*. Upper Saddle River, NJ: Pearson Education, Inc., 660 pp. plus appendices.

This book is available in the book store, and there will also be reserve copies in the library. Used copies should also be easy to find. You are welcome to use an older version, but if you do, you are responsible for any differences in material from the new edition. An excellent optional text, whence some additional required readings will be drawn, is:

Trenhaile, A.S., 2004. *Geomorphology: A Canadian Perspective, Second Edition*. Don Mills, ON: Oxford University Press Canada, 440 pp.

For the enthusiastic, this book will be available in the bookstore. Both the first and second editions of Trenhaile can also be found in the library.

Specific reading requirements are provided below; these may be modified as the term goes on.

EVALUATION

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.

<u>Assignment</u>	<u>Value</u>
Labs (3% for Labs 1 and 5; 4% for others)	46%
Midterm	20%
Final Exam	34%
	100%

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 are hard to reschedule, so you should not miss them unless you are too sick to perform at a normal level.

Students who miss an 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.

GRADING:

The standard grading scale of the School of Arts and Science will be used for this course:

A+	95-100%	B-	70-74%
A	90-94%	C+	65-69%
A-	85-89%	C	60-64%
B+	80-84%	D	50-59%
B	75-79%	F	<50%

COURSE SCHEDULE

<u>Week of</u>	<u>Tuesday</u>	<u>Friday</u>
Jan. 10	Course Intro <i>No lab</i> <i>Reading: Ch. 1</i>	Earth Structure and Plate Tectonics <i>Lab 1: Topographic Maps</i> <i>Reading: pp. 323-329, 340-352..</i>
Jan. 17	The Rock Cycle <i>Lab 2: Mineral and Rock Identification</i> <i>Reading: pp. 330-339.</i>	Tectonic Landforms <i>Lab 2 cont'd.</i> <i>Reading: pp. 357-375.</i>
Jan. 24	Earthquakes <i>Lab 3: Plate Tectonics</i> <i>Reading: pp. 375-383.</i>	Volcanic Landforms <i>Lab 3 cont'd.</i> <i>Reading: pp. 383-394.</i>
Jan. 31	Hydrologic Cycle I <i>Lab 4: Groundwater Hydrology</i> <i>Reading: pp. 245-248, 259-270.</i>	Hydrologic Cycle II <i>Lab 4 cont'd.</i>
Feb. 7	Weathering and Karst <i>Lab 5: Air Photo Basics</i> <i>Reading: pp. 399-413.</i>	<u>No class (reading break)</u>
Feb. 14	Coasts I <i>Lab 6: Coastal Processes and Landforms</i> <i>Reading: Ch. 16.</i>	Coasts II <i>Lab 6 cont'd.</i>
Feb. 21	Slope Erosion <i>No lab: review for midterm</i> <i>Reading: Trenhaile pp. 81-83.</i>	Midterm Exam <i>No lab</i>
Feb. 28	Mass Wasting (lecture and video) <i>Reading: pp. 411-423.</i>	<i>Lab 7: Dallas Road Field Trip</i>
Mar. 7	Rivers I <i>Lab 8: Drainage Basin Hydrology</i> <i>Reading: pp. Ch. 14.</i>	Rivers II <i>Lab 8 cont'd.</i> <i>Reading: Trenhaile pp. 256-271.</i>
Mar. 14	Rivers III <i>Lab 9: Rivers and Fluvial Landforms</i>	<i>River Field Trip – Location TBA</i>
Mar. 21	Glaciers I <i>Lab 10: Glaciers and Glacial Landforms</i> <i>Reading: pp. 519-534</i>	<u>No class (Good Friday)</u>
Mar. 28	Glaciers II <i>Lab 10 cont'd.</i> <i>Reading: pp. 541-550.</i>	<i>Lab 11: Glacial Landforms Field Trip</i>
Apr. 4	Periglacial Landscapes <i>Lab 12: Sedimentology</i> <i>Reading: pp. 534-541.</i>	Arid Landscapes <i>Lab 12 cont'd.</i> <i>Reading: Ch. 15.</i>
Apr. 11	Soil Water Balance and Catch-Up <i>Reading: pp. 248-258.</i>	Review for final exam <i>No lab</i>
Exam Week	Final Exam	