

## **Geog 1000 Introduction to Physical Geography**

Department of Geography, University of Lethbridge

### **Lecture Information:**

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**Instructor:** Dr. Laura Chasmer

**Office:** WE2066

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**Office hours:** UHall B870; Wednesdays from 11-1, or by appointment.

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**\*\* All lectures will be placed on my website before class.**

### **Course Schedule:**

	<b>Lectures</b>	<b>Location</b>
Monday	10:00 – 10:50	PE250
Wednesday	10:00 – 10:50	PE250
Friday	10:00 – 10:50	PE250

### **TA Information:**

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**Teaching Assistant:** Shagedeh Miramisoudi

**Office:**

**Email:**

### **Course Description:**

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In this course, we will learn about some of the fundamental processes and interrelationships between the atmosphere, lithosphere, biosphere, and hydrosphere using an earth systems science approach. The study of Geography includes many of the physical and human interrelationships that occur in the world. These include patterns and processes, variations and changes in time and space. The goal of this course is to build an understanding of the Earth's natural environments and physical cycles: Energy, air, water, climate, weather, geology, landforms, and vegetation. We will also examine modern spatial analysis methods, including remote sensing using satellite and airborne imagery, Geographic Information Systems, and currently important industrial, government, and academic topics of interest. Contemporary issues include climate change, environmental and economic sustainability, and the impacts of human activities will be discussed.

### **Assignments and Exams:**

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*Writing assignments 8% x 5 = 40% of course grade.*

Writing assignments will be due on the following days:

Monday February 3<sup>rd</sup>

Friday February 14<sup>th</sup>

Monday March 17<sup>th</sup>

Monday March 31<sup>st</sup>

Monday April 14<sup>th</sup>

**Midterm Exam 25% - February 26<sup>th</sup>, 2014**

The midterm exam will focus on all material up to Reading Week.

**Final Exam 35% - TBD**

The final exam will focus mainly on the material following the midterm exam, but will also include some review questions pre-midterm. The format of this will be discussed in class as will key topics.

**Course Requirements:**

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Mid-term examination: 25%

Writing Assignments: 40%

Final examination: 35%

Converting Grades to Letters in Geography:

Percentage	Letter Grade	Grade Points	Percentage	Letter Grade	Grade Points
90.0-100	A+	4.0	67.0-69.9	C+	2.3
85.0-89.9	A	4.0	63.0-66.9	C	2.0
80.0-84.9	A-	3.7	60.0-62.9	C-	1.7
77.0-79.9	B+	3.3	55.0-59.9	D+	1.3
73.0-76.9	B	3.0	50.0-54.9	D	1.0
70.0-72.9	B-	2.7	< 50.0	F	0.0

**Resources:**

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**Recommended Textbook:**

Christopherson, R.W. 2013. *Elemental Geosystems* (7<sup>th</sup> Edition). Prentice Hall: New York, Toronto. Pearson Education, Upper Saddle River, NJ, USA. 620 pp.

New or used textbooks can be purchased from the University bookstore. The bookstore also sells a digital e-book (PDF) version of the text at reduced cost. For more information on the various purchasing (or rental) options, contact the bookstore. Further information on the e-book version is at: <http://uleth.jumpbooks.com>.

**Academic Conduct:**

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From the academic calendar: “The integrity of the University and of the degrees the University confers is dependent upon the honesty and soundness of the teacher-student relationship, as well as the integrity of the evaluation process. Conduct by any student that adversely affects this relationship or process represents an academic offence.” (pg. 78).

Please see the academic calendar as to what constitutes an academic offence. Plagiarism (via printed materials or other from students), cheating on exams, duplication of assignments handed in to other

courses, or misrepresentation of materials (etc.) will not be tolerated. Penalties may include: additional work, grade reduction or assignment rejection, grade reduction in the course, and written reprimand to be included in your file. It just isn't worth it!

**Lecture Topics and Assignments: Table 1**

Lectures: Specific topics of concentration will be discussed each week corresponding with alternating weekly writing assignments. Each lecture will focus on a specific overview topic (a range of which are mentioned below). We will also explore some of the many careers that use physical geography, current issues in physical geography (in the news), and some interesting state of the art methods used to study physical geography! Topics may vary slightly and may be added to. I will let you know ahead of time if there will be any changes.

Writing assignments: Students will be required to select one of two readings (depending on their interest) on a current geographic issue related to the previous two weeks of lectures (Table 1). Students will be required to read material and answer questions on the topic. Writing assignments will be emailed to the class on the day of the assignment. Students are required to submit their hard copy assignments on the date due, either before class, or to my office (Water and Environmental Science Building, Rm 2066) during working hours. Approximately two weeks will be provided to complete the assignments (Table 1). Marks will be based on the content of the answer (for a given question related to the reading material), and the quality of writing (grammar, spelling, etc.). The goals of the reading assignments are to: 1) introduce students to interesting and current environmental issues facing our planet; 2) peak students interest in environmental topics of their choice; and 3) work on writing skills, if needed. *Late submissions will be penalised 10% per working day late, to a maximum of 3 days late (after which the assignment will be graded as 0).*

Week	Topics	Writing Assignment Introduced	Writing Assignment Due
1. Jan 8-10	<p><u>An Introduction to the Course</u> <u>The Essentials of Geography</u></p> <ul style="list-style-type: none"> <li>• What is Geography?</li> <li>• A systems view of our world</li> <li>• Feedback mechanisms</li> <li>• What is our location? Coordinate systems and maps</li> <li>• New and interesting topics in Geography!</li> </ul> <p><b>Readings: Chapter 1, pgs 1-30</b></p>	No writing assignment introduced	No writing assignment due
2. Jan 13-17	<p><u>Our Dynamic Planet:</u></p> <ul style="list-style-type: none"> <li>• A history of the Earth</li> <li>• Geological cycles</li> <li>• Plate tectonics</li> </ul> <p><b>Readings: Chapter 8, pgs 254 - 279</b></p>	No writing assignment introduced	No writing assignment due
3. Jan 20-24	<p><u>Solar Energy and the Atmosphere</u> <i>Introduction to Writing Assignment #1</i></p> <ul style="list-style-type: none"> <li>• Solar energy and the electromagnetic spectrum</li> <li>• The seasons</li> <li>• Atmospheric composition</li> <li>• The energy balance at the Earth's surface</li> <li>• Temperature controls and patterns.</li> </ul> <p><b>Readings: Chapters 2 and 3, pgs 34 - 100</b></p>	<b>Monday January 20<sup>th</sup> - Writing Assignment 1: Our dynamic Planet or Solar Energy and the Atmosphere</b> <b><u>DUE: Monday February 3rd</u></b>	No writing assignment due

4. Jan 27-31	<u>Weather and Climate</u> <ul style="list-style-type: none"> <li>• Driving forces in the atmosphere, winds and air pressure.</li> <li>• Atmospheric patterns</li> <li>• Ocean currents</li> <li>• Atmospheric teleconnection patterns</li> <li>• Water and water properties</li> <li>• Atmospheric movements and weather</li> <li>• An introduction to water resources and hydrology</li> </ul> <p><b>Readings: Chapters 4 and 5, pgs 104-164</b></p>	Work on Writing Assignment 1.	No writing assignment due
5. Feb 3-7	<u>Earthquakes and Volcanoes</u> <i>Introduction to Writing Assignment #2</i> <ul style="list-style-type: none"> <li>• Earth's surface characteristics and crustal relief</li> <li>• Mountain building</li> <li>• Earthquakes</li> <li>• Volcanoes</li> </ul> <p><b>Readings: Chapter 9, pgs 282 - 311</b></p>	<b>Monday February 3<sup>rd</sup> – Writing Assignment 2: Weather and Climate or Earthquakes and Volcanoes. <u>DUE: Friday February 14<sup>th</sup></u></b>	<b>Writing Assignment 1 Due: Monday February 3<sup>rd</sup></b>
6. Feb 10 - 14	<u>Weathering and Mass Movements</u> <ul style="list-style-type: none"> <li>• Landmass denudation</li> <li>• Weathering processes</li> <li>• Karst topography</li> <li>• Mass movement processes</li> </ul> <p><i>A review for the mid-term exam. What is expected, exam set up, key terms of interest, etc. Exam will include up to and including this week's lectures.</i></p> <p><b>Readings: Chapter 10, pgs 318 - 332</b></p>	Work on Writing Assignment 2.	<b>Writing Assignment 2 Due: Friday February 14<sup>th</sup> (to get it out of the way before reading week and midterm)</b>
7. Feb 17 - 21	<u>February 18 – 22 – READING WEEK</u> <i>Family Day is on February 17<sup>th</sup>, so No Classes! ☺</i>	Take a break from writing assignments this week to study for midterm	No writing assignment due
8. Feb 24 - 28	<u>Fluvial Geomorphology</u> <ul style="list-style-type: none"> <li>• Spatial organization of streams</li> <li>• Fluvial concepts, processes, and landforms</li> <li>• River flooding and management</li> </ul> <p><b>Readings: Chapters 11 pgs 344-371</b></p>	<b><u>Midterm Exam February 26<sup>th</sup>, in class</u></b>	No writing assignment due
9. Mar 3 - 7	<u>Ocean processes, Coastal Systems and Aeolian Geomorphology</u> <i>An Introduction to Writing Assignment #3</i> <ul style="list-style-type: none"> <li>• The composition of oceans</li> <li>• Coastal geomorphology and erosion</li> <li>• Wind erosion, transportation and deposition</li> </ul> <p><b>Readings: Chapters 12 pgs 374 - 404</b></p>	<b>Monday March 3<sup>rd</sup> – Writing Assignment 3: Weathering and Mass movements or Ocean Processes or Aeolian Geomorphology. <u>DUE: Monday March 17<sup>th</sup></u></b>	No writing assignment due
10. Mar 10 -14	<u>Biogeography</u> <ul style="list-style-type: none"> <li>• Ecosystem components</li> <li>• Nutrient cycles and flows</li> <li>• Biodiversity, evolution and stability</li> <li>• Ecological succession</li> <li>• Terrestrial biomes</li> <li>• Introduction to soils</li> </ul> <p><b>Readings: Chapter 15, pgs 472 - 495</b></p>	Work on Writing Assignment 3.	No writing assignment due

11. Mar 17 - 21	<u>Glacial Processes</u> <i>An Introduction to Writing Assignment #4</i> <ul style="list-style-type: none"> <li>• Rivers and ice sheets</li> <li>• Glacial Processes and Landforms</li> <li>• The Periglacial Environment</li> <li>• Past climates</li> <li>• Arctic and Antarctic regions</li> <li>• Permafrost</li> </ul> <i>Guest Lecture on new and innovative technologies for characterizing glacial losses – Dr. Chris Hopkinson</i> <b>Readings: Chapter 13, pgs 408 – 438</b>	<b>Monday March 17<sup>th</sup></b> <b>– Writing Assignment 4: Biogeography or Glacial Processes.</b> <b><u>DUE: Monday March 31<sup>st</sup></u></b>	<b>Writing Assignment 3 Due: Monday March 17<sup>th</sup></b>
11. Mar 24 - 28	<u>Spatial Sciences and Geographic Information Systems</u> <ul style="list-style-type: none"> <li>• Spatial Analysis</li> <li>• GPS</li> <li>• Geographic Information systems</li> </ul> <b>Readings: Chapter 1, pgs 1 - 28</b>	Work on Writing Assignment 4	No writing assignment due
12. Mar 31 – Apr 4	<u>Remote Sensing</u> <i>Introduction to Writing Assignment #5</i> <ul style="list-style-type: none"> <li>• An Introduction to Remote Sensing</li> <li>• Active and passive remote sensing</li> <li>• Interesting Technologies!</li> </ul> <i>Possible guest lecture on Amethyst Program and Canadian Remote Sensing Society by Dr. Derek Peddle</i> <i>Other possible guest lectures.</i> <b>Readings: Chapter 1, end of chapter.</b>	<b>Monday March 31<sup>st</sup></b> <b>– Writing Assignment 5: Geographic Information Systems or Remote Sensing</b> <b><u>DUE: Monday April 14<sup>th</sup></u></b>	<b>Writing Assignment 4 Due: Monday March 31<sup>st</sup></b>
13. Apr 7 - 11	<u>Environmental Change</u> <ul style="list-style-type: none"> <li>• Water Resources</li> <li>• Our water supply</li> <li>• The human count</li> <li>• Climate change</li> <li>• Our changing planet</li> </ul> <b>Readings: Chapter 6, pgs 182-210; Chapter 17, pgs 525 - 531</b>	Work on Writing Assignment 5	No writing assignment due
14. Apr 14 <sup>th</sup>	<b>Final Exam Review</b>	Last day of classes!	<b>Writing Assignment 5 Due: Monday April 14<sup>th</sup></b>