

Geography 1300b Physical Geography

Department of Geography, University of Western Ontario

Course Outline

Course Instructor: Beth Hundey

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Office Hours: Tuesdays and Thursdays 11:30 am-12:30 pm or by appointment.

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| Lecture: | Tuesday and Thursday 10:30-11:30 am, UCC 146 |
| Laboratories: | Monday, 10:30-12:30, Rm 2333, Social Science Centre |
| | Monday, 12:30-2:30, Rm 2333, Social Science Centre |
| | Monday, 2:30-4:30, Rm 2333, Social Science Centre |
| | Tuesday, 2:30-4:30, Rm 2333, Social Science Centre |

Course Description

Physical Geography examines the phenomena and processes of the Earth-atmosphere system that underlie human environment interactions and environmental change. Topics include: the atmosphere and fundamentals of weather and climate, water in the environment, earth surface processes, biogeography, and environmental change.

General Course Objectives

At the end of this course you should be able to:

- Describe the scope, core themes, and concepts in physical geography
- Explain the physical principles of important atmospheric, lithospheric (endo- and exogenic), hydrologic and biogeographic processes and their mutual interaction,
- Describe and explain spatial and temporal variations in the characteristics of the global physical environment
- Discuss examples of the direct and indirect effects of human activity on the physical environment
- Apply simple techniques to the description and analysis of the physical environment.

Format

Instruction is through two lecture hours and two laboratory hours per week.

Teaching Assistants

Lab sections are taught by graduate Teaching Assistants

Evaluation

The material covered in lectures including the readings and lab assignments will be evaluated in a mid-year and a final exam. Selected laboratory assignments will be marked. Marking schemes will be used to assess answers to labs and exams. Partial marks are awarded for incomplete answers.

Labs are due to the Teaching Assistants at the beginning of lab time the following week unless specified by your TA. Late labs will be penalized at 10% per day.

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| Laboratory Assignments | 35% |
| Midterm | 20% |
| Physical Geography Photo portfolio | 5% |
| Final exam | 40% |

Notes:

1. Marks as posted by the course instructor are considered provisional until approved by the Department Chair. Final marks are received from the Registrar; errors may be corrected through use of a Marks Revision Form.
2. Computer-marked multiple choice tests and/ or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.
3. No electronic devices will be allowed during test and examinations.

Penalties

Exams: In accordance with university policy, missed exams cannot be made up except on written medical grounds and notification prior to exam date.

Labs: Late labs have a penalty of 10% per day. Labs submitted more than 1 week late will not be accepted. Exceptions can be made for documented medical and other significant reasons beyond your control (see subsequent sections).

Non-medical Absences

Non-medical absence from the midterm requires prior approval of the instructor or approval by the Dean's office (appropriate documentation will be required by the Faculty Dean's Office for approval if it is not obtained prior to the midterm).

Medical absences

For UWO Policy on Accommodation for Medical Illness and a downloadable SMC see:

http://www.uwo.ca/univsec/handbook/appeals/accommodation_medical.pdf

Downloadable Student Medical Certificate (SMC): <https://studentservices.uwo.ca> under the Medical Documentation heading

Students seeking academic accommodation on medical grounds for any missed tests, exams, participation components and/or assignments worth 10% or more of their final grade must apply to the Academic Counselling office of their home Faculty and provide documentation. Academic accommodation cannot be granted by the instructor or department.

Course Texts

Text is available from the UWO Bookstore.

R. Christopherson and M-L Byrne, 2009. *Canadian Geosystems: An Introduction to Physical Geography, 2nd Canadian Edition*. Toronto, Pearson Education Canada. ISBN 978-0-13-515456-4.

Supplementary Material:

When you buy the textbook you will be able to access the student area of the textbook website (instructions are in the book). This can be used mainly as a study tool, with sample self-test questions, reviews, and weblinks.

Other helpful websites and online resources will be posted on WebCT.

Course Web site

Additional course information will be provided on the web. Use <http://webct.uwo.ca> and then click on WebCT(OWL) to log in using your uwo username and password, or go directly to <https://owl.uwo.ca/webct/logon/2243896938011> to log on. Your log in will require that you be officially enrolled in the course. This site will provide: lecture materials, some additional lab materials, and a FAQ (Frequently Asked Questions) document that will describe procedures to follow in the event of illness, missing a lab, an exam, etc. Please become familiar with this site and carefully check that your computer meets the WebCT OWL requirements.

Academic Honesty / Plagiarism

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf

Computer-marked multiple-choice tests and/ or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Western's commitment to accessibility

The University of Western Ontario is committed to achieving barrier free accessibility for persons studying, visiting and working at Western.

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

Support Services

Registrarial Services: <http://www3.registrar.uwo.ca/index.cfm>

Student Development Services: <http://www.sdc.uwo.ca/>

Fire Drills:

Students are required to evacuate the building when the fire alarm is activated.

Lecture / Laboratory Timetable

The following topics will be covered in the course, as time permits.

Labs are due 1 week from when they are assigned, at the start of the next lab period, unless otherwise indicated by your Teaching Assistant.

| Date | Week | Lecture Topic | Laboratory |
|------------|------|--|--------------------------|
| Jan 10 | 1 | Course Outline. What is Physical Geography? | |
| Jan 12 | | Physical Characteristics of Earth: Lithosphere | <i>No labs</i> |
| Jan 17 | 2 | Solar Radiation and Earth-Sun Relations | Maps |
| Jan 19 | | Global and Local Scale Radiation Budgets and Energy Balances | |
| Jan 24 | 3 | Atmospheric moisture, stability, vertical motion and clouds | Atmospheric Processes I |
| Jan 26 | | Atmospheric and Oceanic Circulations | |
| Jan 31 | 4 | Mid-latitude Weather Systems & Severe Weather | Atmospheric Processes II |
| Feb 2 | | Global and Regional Hydrology and Water Resources | |
| Feb 7 | 5 | Runoff and Streamflow | Synoptic Meteorology |
| Feb 9 | | Geomorphology – the sediment cascade, endogenic landforms | |
| Feb 14 | 6 | Mass Wasting and Hillslopes | Soil-water balance |
| Feb 16 | | Drainage Basins and Fluvial Processes | |
| Feb 21, 23 | 7 | <i>Reading Week!</i> | <i>No labs.</i> |
| Feb 28 | 8 | River Morphology and Management | <i>No labs</i> |
| Mar 1 | | Midterm | |
| Mar 6 | 9 | The Cryosphere: sea ice, permafrost and glaciers | Mass Movement |
| Mar 8 | | Glacial Landforms | |
| Mar 13 | 10 | Weathering and Soils | Streamflow |
| Mar 15 | | Geography of Soils | |
| Mar 20 | 11 | The Biosphere – ecosystem processes | Fluvial Landforms |
| Mar 22 | | Biomes and eco-climatic regions | |

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| Mar 27 | 12 | Biogeography | Environmental Change |
| Mar 29 | | Physical Geography of SW Ontario | |
| Apr 3 | 13 | Environmental Change: Urban Scale | Photo portfolio: consult your TA and peers (optional) |
| Apr 5 | | Environmental Change: Global Scale | |
| Apr 10 | 14 | Anthropogenic Environmental Change | Photo portfolio due |

TEXT READINGS

| Date | | Text Readings* |
|--------------|--|--|
| Jan. 10 | Introduction: structure and composition of the course. Introduction to the subject of Geography. | Chp. 1: pg 1-15 |
| Jan. 12 | Physical Characteristics of Earth: Lithosphere | Chp. 11 Ch 12: 371-374 |
| Jan. 17 | Solar Radiation and Earth-Sun Relations | Chp. 2: pg 42-58; Chp. 3: 63-75; Chp. 4: 93-101. |
| Jan. 19 | Global and Local Scale Radiation Budgets and Energy Balances | Chp. 2: pg 48-50; Chp. 4: 92-114; Chp. 5 |
| Jan. 24 | Atmospheric Moisture, Stability, Vertical Motion and Clouds | Chp. 7 |
| Jan. 26 | Atmospheric and Oceanic Circulations: Global scale winds. Thermohaline circulations; El Niño – La Niña. | Chp. 6 |
| Jan. 31 | Mid-latitude weather systems and Severe Weather: formation of mid-latitude cyclones and fronts and | Chp. 8 |
| Feb. 2 | Global and Regional Water Flux and Budgets and Water Resources | Chp. 9: 251-266; 276-277 |
| Feb. 7 | Runoff and Streamflow | Chp. 9; Chp. 14: 480-481 |
| Feb. 9 | Geomorphology – The Sediment Cascade; Endogenic Landforms | Chp. 12: 375-390; 399-410; Chp.13: 416-417 |
| Feb. 14 | Mass Wasting and Hillslopes | Chp.13: 417-426; 431-442 |
| Feb. 16 | Drainage Basins and Fluvial Processes | Chp. 14: 447-459 |
| Feb. 21 & 23 | Reading Week! No Classes! | |
| Feb. 28 | River Morphology and Management | Chp. 14: 459-475 |

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| Mar. 1 | MIDTERM (in class) | |
| Mar. 6 | The Cryosphere: Sea Ice and Permafrost and Glaciers | Chp.17: 551-558; 570-576; 585-589 |
| Mar. 8 | Glacial Landforms | Ch 17: 558-570 |
| Mar. 13 | Weathering and Soils | Chp. 18: 595-606. |
| Mar. 15 | Geography of Soils | Ch. 18: pg 606-622. Ch. 19: pg 637-641; Appendix b |
| Mar. 20 | The Biosphere – Ecosystem Processes | Chp 19 |
| Mar. 22 | Biomes and Eco-climatic Regions | Chp 20 (focus on Canadian Biomes) |
| Mar. 27 | Biogeography | Supplementary Readings* |
| Mar. 29 | The Physical Geography of Southern Ontario: the geologic setting, glacial history and post-glacial landscape development. Continental glaciation. | Chp 17: 578-585 |
| Apr. 3 | Environmental Change: Urban Scale: Urban heat islands, their linkage to larger scale environmental change and mitigation and adaptation efforts | Supplementary readings* |
| Apr. 5 | Environmental Change: Global Scale: evidence for and causes of climate change global warming, projections. | Chp. 17: pg 581-585; Chp. 10: pg 315-319. |
| Apr. 10 | Anthropogenic Environmental Change | Supplementary readings* |

* Supplementary readings from other sources such as websites, other texts or journal articles are indicated on the lecture slide templates and are intended to provide more details on specific lecture topics in addition to the text. In some cases lectures may be primarily based on these sources where coverage by the text is limited.

Text readings are designed to complement the lectures.

Reading more widely can improve understanding of course materials.

Ensure you take adequate class notes to understand the lecture material – do not rely on the templates, they are not lecture notes!