# GEOG 1300b Physical Geography

**Course Instructor**

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Office hours: Wednesdays 1:30-3 pm or by appointment (made in advance via email)

**Lecture:** Monday and Thursday (UCC 146), 09:30-10:30,
**Laboratories**: Mon, 10:30-12:30, SSC 2333; Mon. 12:30-2:30, SSC 2333; Mon. 2:30-4:30, SSC 2333; Tuesday, 2:30-4:30, SSC 2333

**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 and biogeography.

**General Course Objectives**

At the end of the 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.

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|---|---|
| Laboratory Assignments | 35% |
| Midterm | 20% |
| Physical Geography Photo Portfolio | 10% |
| Final exam | 35% |
| Total | 100% |

**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

**Statement on Use of Electronic Devices**

No calculators will be required or permitted in the exams. Students who require electronic assistance with language translation must obtain prior approval from the instructor.

**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.

**Mental Health**

If you or someone you know is experiencing distress, there are several resources here at Western to assist you. Please visit the site below for more information on mental health resources:
http://www.uwo.ca/uwocom/mentalhealth/.

## Course Texts

The course text is available from the UWO Bookstore.

R. Christopherson and M-L Byrne, 2012. *Canadian Geosystems An Introduction To Physical Geography, 3rd Canadian Edition*. Toronto, Pearson Education Canada. ISBN 978-0-13-210612-2

Note: earlier editions of the text are generally still suitable and may be available from the used bookstore or other sources. They can be used with some attention to the fact that page number references are likely to be slightly different.

## Supplementary Material:

Laboratory assignments are provided through the course website on Sakai. You are responsible for printing these and bringing to your lab.
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 links to supplementary materials will be provided through the course website on Sakai.

**Course Web Site**

Additional course information will be provided on the web using Sakai. Use http://owl.uwo.ca and then log in using your uwo username and password. 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 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.**

| Date | Lecture Topic | Week | Laboratory for this Week |
|---|---|---|---|
| Jan. 7 | Course Outline. What is Physical Geography? | 1 | |
| Jan. 10 | Earth System Basics and the Tools of Geographers | 1 | |
| Jan. 14 | Solar Radiation and Earth-Sun Relations | 2 | Maps |
| Jan. 17 | Global and Local Scale Radiation Budgets and Energy Balances | 2 | |
| Jan. 21 | Atmospheric and Oceanic Circulations | 3 | Atmospheric Processes I |
| Jan. 24 | Atmospheric Moisture, Stability, and Clouds | 3 | |
| Jan. 28 | Mid-latitude Weather Systems | 4 | Atmospheric Processes II |
| Jan. 31 | Severe Weather | 4 | |
| Feb. 4 | Global & Regional Hydrology and Water Resources | 5 | Synoptic Meteorology |
| Feb. 7 | Runoff and Streamflow | 5 | |
| Feb. 11 | The Lithosphere | 6 | Soil water balance |
| Feb. 14 | Geomorphology: Sediment cascade, Endogenic Landforms | 6 | |
| *Feb. 18&21* | *Reading Week!* | *7* | *No labs.* |
| Feb. 25 | Mass Wasting and Hillslopes | 8 | No labs |
| Feb. 28 | Drainage Basins and Fluvial Processes | 8 | |
| Mar.1 | **MIDTERM**<br>**2:30 – 4:30 Friday Mar. 1, SSC 2024** | | |
| Mar. 4 | River Morphology and Management | 9 | Mass Movement |
| Mar. 7 | Coastal Dynamics | 9 | |
| Mar. 11 | The Cryosphere: Glaciers, Sea Ice & Permafrost | 10 | Streamflow |
| Mar. 14 | Glacial Landforms | 10 | |
| Mar. 18 | Weathering and Soils | 11 | Fluvial Landforms |
| Mar. 21 | Geography of Soils | 11 | |
| Mar. 25 | The Biosphere: Ecosystem Processes | 12 | Photo portfolio |
| Mar. 28 | Biomes and Eco-climatic Regions | 12 | |
| Apr. 1 | Physical Geography of SW Ontario | 13 | Soils |
| Apr. 4 | Environmental Change: Urban Scale | 13 | |
| Apr. 8 | Environmental Change: Global Scale | 14 | |
| Apr. 11 | Anthropogenic Environmental Change | 14 | |

**TEXT READINGS**

**Page numbers are for the third edition of Geosystems (Canadian Edition); other editions may be slightly different**

| Date | Lecture Topic | Text Readings* |
|---|---|---|
| Jan. 7 | **Introduction**: structure and composition of the course. Introduction to the subject of Geography. | Chp. 1 |
| Jan. 10 | **Earth System Basics and the Tools of Geographers** | Chp. 1 |
| Jan. 14 | **Solar Radiation and Earth-Sun Relations** | Chp. 2: pg 42-56;<br>Chp. 3: 62-69;<br>Chp. 4: 93-101. |
| Jan. 17 | **Global and Local Scale Radiation Budgets and Energy Balances** | Chp. 2: pg 42-56;<br>Chp. 4: 85-107;<br>Chp. 5 |
| Jan. 21 | **Atmospheric and Oceanic Circulations**: Global scale winds. Thermohaline circulations; El Niño – La Niña. | Chp. 6 |
| Jan. 24 | **Atmospheric Moisture, Stability and Clouds** | Chp. 7 |
| Jan. 28 | **Mid-latitude weather systems**: formation of mid-latitude cyclones and fronts. | Chp. 8: 196-212. |
| Jan. 31 | **Severe Weather** | Chp. 8: 212-228 |
| Feb. 4 | **Global and Regional Water Flux and Budgets & Water Resources** | Chp. 9 |
| Feb. 7 | **Runoff and Streamflow** | Chp 9; Ch14: 418-426 |
| Feb. 11 | **The Lithosphere** | Chp. 11<br>Ch 12: 344-364 |
| Feb. 14 | **Geomorphology: The Sediment Cascade; Endogenic Landforms** | Chp. 12: 352-364;<br>Chp.13: 383-393 |
| Feb. 18&21 | **Reading Week! No classes** | |
| Feb. 25 | **Mass Wasting and Hillslopes** | Chp.13 |
| Feb. 28 | **Drainage Basins and Fluvial Processes** | Chp. 14: 418-436 |
| Mar. 4 | **River Morphology and Management** | Chp. 14: 436-449 |
| Mar. 7 | **Coastal Dynamics** | Chp. 16: 482-502; 507-511. |
| Mar. 11 | **The Cryosphere: Glaciers, Sea Ice and Permafrost** | Chp.17: 514-524; 530-534, 548-549 |

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| Mar. 14 | **Glacial Landforms** | Ch 17: 524-530, 534-536 |
| Mar. 18 | **Weathering and Soils** | Chp. 18: 554-563.<br>Chp 13: 393-400 |
| Mar. 21 | **Geography of Soils** | Chp. 18: 563-562*<br>(NOTE REVISED MAPS ON OWL). |
| Mar. 25 | **The Biosphere: Ecosystem Processes** | Chp 19 |
| Mar. 28 | **Biomes and Eco-climatic Regions** | Chp 20 (focus on Canadian Biomes) |
| Apr. 1 | **The Physical Geography of Southern Ontario**: the geologic setting, glacial history and post-glacial landscape development. Continental glaciation. | Chp 17: 537-541 |
| Apr. 4 | **Environmental Change: Urban Scale:** Urban heat islands, their linkage to larger scale environmental change and mitigation and adaptation efforts | Chp 4: 101,104-106<br>Supplementary readings* |
| Apr. 8 | **Environmental Change: Global Scale**: evidence for and causes of climate change global warming, projections. | Chp. 17: 541-544;<br>Chp. 10: 294-302. |
| Apr. 11 | **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!