



**Department of Geography & Environmental Management
University of Waterloo**

GEOG 102 – Global Environmental Systems: Processes and Change
Winter 2020

Instructor: Dr. M.L. Macrae
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Office Hours: T 2:30-3:30pm

Class: T,Th 4:00-5:20pm
Location: RCH 101
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Course Objectives:

An introductory course in the study of the energy and mass flows that impact the climate and landscape of the Earth system. There is focus on understanding processes of change and variability as well as the impacts of humans on these systems that increasingly define the Anthropocene.

Course Objectives:

To examine the foundations of physical geography by exploring the major atmospheric, hydrologic, geomorphologic, and biogeographic processes at the earth's surface.

Course Textbook:

Christopherson, Robert W., Birkeland, Ginger, Byrne, Mary-Louise, and Giles, Philip.
Geosystems: An Introduction to Physical Geography, Updated 4th Edition. Pearson Education: Canada, 2019.

Course Evaluation:

Test 1	30 %
Test 2	30 %
Final Exam	40 %

Examinations:

It is the student's responsibility to be available to write exams in the scheduled times. The midterm tests will be held in class during the lecture period. The final exam will be held during the university's scheduled examination period. The exams are mandatory, and **no alternative exam dates are possible**. If you miss an exam due to a valid medical reason, contact me

immediately (within 48 hours of the missed exam) and promptly obtain a valid medical or counselor's note explaining the reason for your absence, degree of incapacitation, dates covered by the note, etc. Please provide a copy of this note to me and your grades will be redistributed accordingly. If you miss the final exam or both midterms (and have a valid doctor's note to verify the absence) your grades cannot be redistributed and you must instead write the final exam the following year (i.e. Fall 2020). There are NO EXCEPTIONS to this. Make up exams or essays are NOT POSSIBLE.

Electronic Copies of Lecture Notes: Lecture notes will be posted on **Learn** prior to lectures. Users can login to LEARN via: <http://learn.uwaterloo.ca/>
Use your WatIAM/Quest username and password.

Important Dates for Fall 2020 term:
<http://ugradcalendar.uwaterloo.ca/page/uWaterloo-Calendar-Events-and-Academic-Deadlines> .

Intellectual Property:

Students should be aware that this course contains the intellectual property of their instructor, TA, and/or the University of Waterloo. Intellectual property includes items such as:

- Lecture content, spoken and written (and any audio/video recording thereof);
- Lecture handouts, presentations, and other materials prepared for the course (e.g., PowerPoint slides);
- Questions or solution sets from various types of assessments (e.g., assignments, quizzes, tests, final exams); and
- Work protected by copyright (e.g., any work authored by the instructor or TA or used by the instructor or TA with permission of the copyright owner).

Course materials and the intellectual property contained therein, are used to enhance a student's educational experience. However, sharing this intellectual property without the intellectual property owner's permission is a violation of intellectual property rights. For this reason, it is necessary to ask the instructor, TA and/or the University of Waterloo for permission before uploading and sharing the intellectual property of others online (e.g., to an online repository).

Permission from an instructor, TA or the University is also necessary before sharing the intellectual property of others from completed courses with students taking the same/similar courses in subsequent terms/years. In many cases, instructors might be happy to allow distribution of certain materials. However, doing so without expressed permission is considered a violation of intellectual property rights.

Please alert the instructor if you become aware of intellectual property belonging to others (past or present) circulating, either through the student body or online. The intellectual property rights owner deserves to know (and may have already given their consent).

Academic Integrity:

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. The University's guiding principles on academic integrity can be found here: <http://uwaterloo.ca/academicintegrity>. ENV students are strongly encouraged to

review the material provided by the university's Academic Integrity office specifically for students: <http://uwaterloo.ca/academicintegrity/Students/index.html>

Students are also expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for their actions. Students who are unsure whether an action constitutes an offense, or who need help in learning how to avoid offenses (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. Students may also complete the following tutorial: <https://uwaterloo.ca/library/get-assignment-and-research-help/academic-integrity/academic-integrity-tutorial>

When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to Policy 71 - Student Discipline: <https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-71>. Students who believe that they have been wrongfully or unjustly penalized have the right to grieve; refer to Policy #70, Student Grievance: <https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-70>

Note for students with disabilities: AccessAbility Services, located in Needles Hall, Room 1401, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term.

Mental Health: The University of Waterloo, the Faculty of Environment and our Departments/Schools consider students' well-being to be extremely important. We recognize that throughout the term students may face health challenges - physical and / or emotional. **Please note that help is available.** Mental health is a serious issue for everyone and can affect your ability to do your best work. Counselling Services <http://www.uwaterloo.ca/counselling-services> is an inclusive, non-judgmental, and confidential space for anyone to seek support. They offer confidential counselling for a variety of areas including anxiety, stress management, depression, grief, substance use, sexuality, relationship issues, and much more.

Religious Observances: Students need to inform the instructor at the beginning of term if special accommodation needs to be made for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. See Policy 70 - Student Petitions and Grievances, Section 4, www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt please contact your Undergraduate Advisor for details.

Appeals: A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 – (Student Discipline) may be appealed if

there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals) www.adm.uwaterloo.ca/infosec/Policies/policy72.htm

Unclaimed assignments or tests:

Unclaimed assignments/tests will be retained until one month after term grades become official in quest. After that time, they will be destroyed in compliance with UW's [confidential shredding procedures](#).

Communications with Instructor and Teaching Assistants:

All communication with students must be through either the student's University of Waterloo email account or via Learn. If a student emails the instructor or TA from a personal account they will be requested to resend the email using their personal University of Waterloo email account.

Lecture Schedule:

Week #	Date	Topics	Readings (pg)
1	Jan. 7	1. Introduction to the Course	
2	Jan. 9	2. Essentials of Geography	2-30
	Jan. 14	3. Solar Energy to Earth & the Seasons; Earth's Atmosphere	45-58; 66-73
3	Jan. 16	4. Radiation & Surface Energy Balances	48-50; 92-111
	Jan. 21	5. Global Temperatures	119-134
4	Jan. 23	6. Atmospheric Circulation	143-171
	Jan. 28	7. Atmospheric Moisture	181-199
5	Jan. 30	8. Weather	207-235
	Feb. 4	Test 1	
	Feb. 6	9. Global Water Resources	241-268
6	Feb. 11	10. Global Climate Systems	275-301
	Feb. 13	11. Climate Change	307-339
7	Feb. 18 Feb. 20	READING WEEK	
8	Feb. 25	12. The Dynamic Planet	347-377
	Feb. 27	13. Tectonics, Earthquakes, and Volcanism	383-417
9	Mar. 3	14. Weathering, Karst Landscapes, and Mass Movement	423-447
	Mar. 5	Test 2	
10	Mar. 10	15. Fluvial Processes & Landforms	454-484
	Mar. 12	16. Geomorphologic Processes of Waves & Wind	491-525
11	Mar. 17 Mar. 19	Classes Cancelled	
12	Mar. 24	17. Glacial and Periglacial Environments	533-561
	Mar. 26	18. The Geography of Soils	571-599
13	Mar. 31	19. Ecosystems & Biogeochemical Cycles	605-634
	Apr. 2	Exam Review/Overflow	