

GLOBAL ENVIRONMENTAL SYSTEMS: PROCESSES AND CHANGE WINTER 2023

GEOG 102

Published Dec 08, 2022

CLASS SCHEDULE

Section	Location	Time	Instructor(s)
GEOG 102 001 [LEC]	AL 116	Tuesdays & Thursdays 11:30 a.m. - 12:50 p.m.	Merrin Macrae merrin.macrae@uwaterloo.ca
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INSTRUCTOR / TA INFORMATION

Instructor: Dr. M.L. Macrae

Office: EV1 237

Email: mmacrae@uwaterloo.ca

Office Hours: T 10:00-11:00 am

COURSE DESCRIPTION

Calendar Description for GEOG 102

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.

LEARNING OUTCOMES

By the end of this course students should be able to:

understand the foundations of physical geography with an improved understanding of the major atmospheric, hydrologic, geomorphologic, and biogeographic processes at the earth's surface

TENTATIVE COURSE SCHEDULE

Week #	Date	Topics	Readings (pg)
1	Jan. 10 Jan. 12	1. Introduction to the Course 2. Essentials of Geography	2-30
2	Jan. 17 Jan. 19	3. Solar Energy to Earth & the Seasons; Earth's Atmosphere 4. Radiation & Surface Energy Balances	45-58; 66-73 48-50; 92-111
3	Jan. 24 Jan. 26	5. Global Temperatures 6. Atmospheric Circulation	119-134 143-171
4	Jan. 31 Feb. 2	7. Atmospheric Moisture 8. Weather	181-199 207-235
5	Feb. 7 Feb. 9	<i>No Lecture – Study Day</i> Test 1	
6	Feb. 14 Feb. 16	9. Global Water Resources 10. Global Climate Systems	241-268 275-301
7	Feb. 22 Feb. 24	READING WEEK	
8	Feb. 28 Mar. 2	11. Climate Change 12. The Dynamic Planet	307-339 347-377
9	Mar. 7 Mar. 9	13. Tectonics, Earthquakes, and Volcanism 14. Weathering, Karst Landscapes, and Mass Movement	383-417 423-447
10	Mar. 14	<i>No Lecture – Study Day</i>	

	Mar. 16	Test 2	
11	Mar. 21	15. Fluvial Processes & Landforms	454-484
	Mar. 23	16. Geomorphologic Processes of Waves & Wind	491-525
12	Mar. 28	17. Glacial and Periglacial Environments	533-561
	Mar. 30	18. The Geography of Soils	571-599
13	Apr. 4	19. Ecosystems & Biogeochemical Cycles	605-634
	Apr. 6	Exam Review/Overflow	

TEXTS / MATERIALS

Title / Name	Notes / Comments	Required
Christopherson, Robert W., Birkeland, Ginger, Byrne, Mary-Louise, and Giles, Philip. Geosystems: An Introduction to Physical Geography, Updated 4th Edition. Pearson Education: Canada, 2019. (180 Day Subscription)	Previous versions of this textbook are fine, but the pages may not line up perfectly. I will also place versions of this text (this version and older) on reserve in the library. It is important that you do the readings in this course to succeed.	Yes

STUDENT ASSESSMENT

Component	Value
Midterm 1	30%
Midterm 2	30%
Final Exam	40%

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). A missed midterm will result in a reallocation of grades between the remaining two exams. If you miss the final exam or both midterms (even if you have a valid doctor's note to verify the absence) your grades cannot be redistributed and you must instead write the missed exam the following term that the course is offered. There are NO EXCEPTIONS to this and make up exams or essays are NOT POSSIBLE.

ASSIGNMENT SCREENING

No assignment screening will be used in this course.

ADMINISTRATIVE POLICY

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/> (<http://learn.uwaterloo.ca/>)

Use your WatIAM/Quest username and password. Recorded versions of lectures are not available. *If you miss a class, please arrange to get copies of notes from another student in the class.*

Unclaimed assignments or tests:

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](http://www.adm.uwaterloo.ca/infostor/Confidential%20Shredding%20procedures%202008.htm) (<http://www.adm.uwaterloo.ca/infostor/Confidential%20Shredding%20procedures%202008.htm>) *Please note that although you can come and view your exams in the office with the TA or instructor, exams are not returned to students.*

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 <https://uwaterloo.ca/campus-wellness/> (<https://uwaterloo.ca/campus-wellness/>) 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.

All students are encouraged to download the WatSAFE app which is available free through the google and iOS app stores. The WatSAFE app provides on- and off-campus contacts for students in distress, including international students, and other information related to campus safety and security.

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.

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.

Recording lecture: Use of recording devices during lectures is only allowed with explicit permission of the instructor of the course. If allowed, video recordings may only include images of the instructor and not fellow classmates. Posting of videos or links to the video to any website, including but not limited to social media sites such as: facebook, twitter, etc., is strictly prohibited.

UNIVERSITY POLICY

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. [Check [the Office of Academic Integrity](https://uwaterloo.ca/academic-integrity/) (<https://uwaterloo.ca/academic-integrity/>) for more information.]

Grievance: A student who believes that a decision affecting some aspect of their university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70, Student Petitions and Grievances, Section 4](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70>) . When in doubt, please be certain to contact the department's administrative assistant who will provide further assistance.

Discipline: A student is expected to know what constitutes academic integrity to avoid committing an academic offence, and to take responsibility for their actions. [Check [the Office of Academic Integrity](https://uwaterloo.ca/academic-integrity/) (<https://uwaterloo.ca/academic-integrity/>) for more information.] A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate associate dean. For information on categories of offences and types of penalties, students should refer to [Policy 71, Student Discipline](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71>) . For typical penalties, check [Guidelines for the Assessment of Penalties](https://uwaterloo.ca/secretariat/guidelines/guidelines-assessment-penalties) (<https://uwaterloo.ca/secretariat/guidelines/guidelines-assessment-penalties>) .

Appeals: A decision made or penalty imposed under [Policy 70, Student Petitions and Grievances](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70>) (other than a petition) or [Policy 71, Student Discipline](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71>) may be appealed if there is a ground. A student who believes they have a ground for an appeal should refer to [Policy 72, Student Appeals](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-72) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-72>) .

Note for students with disabilities: [AccessAbility Services](https://uwaterloo.ca/disability-services/) (<https://uwaterloo.ca/disability-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.

Turnitin.com: Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin in this course.

It is the responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit alternate assignment.