

University of Vermont
GEOG 040: Weather, Climate, and Landscapes, 3 credits
 Department of Geography, Spring 2020

Time	TuTh 4:25 PM – 5:40 PM		
Location	Lafayette L108		
Instructors	Dr. Lesley-Ann Dupigny-Giroux	Caitlin Crossett	Dr. Beverley Wemple
Office	Old Mill Rm 202	Old Mill Rm 213	Old Mill Rm 201
Email	ldupigny@uvm.edu	ccrosset@uvm.edu	bwemple@uvm.edu
Office Hours	Wednesdays 9:30-12:00	Mondays 11:00-12:00 Thursdays 8:30-10:30	Tuesdays 8:30-10:30 Fridays 10:00-11:00
TAs	Theresa Henckel (theresa.henckel@uvm.edu):		
	Maeve Naumann (maeve.naumann@uvm.edu):		

Course Description:

Polar Vortex, “Godzilla El Niño,” fires in the western US, mega droughts in California, Hurricane Sandy, Tropical Storm Irene, Lake Champlain flooding. Why do these events occur? What natural processes and human influences drive their occurrence? This class will equip you with the fundamental concepts, tools and statistical techniques to explore and answer these questions, drawing on the fields of climatology, biogeography, and geomorphology. We will examine what drives weather events, climatic variability, vegetation distribution and the evolution of landscapes. We will also explore teleconnections such as the North Atlantic Oscillation and El Niño-Southern Oscillation, hydroclimatological extremes and anthropogenic (human-induced) climate change. Historical and near real-time data will be manipulated via statistics, weather map interpretation, indices, modeling and remote sensing. Throughout the course, we will look at challenges and innovations in instrumentation and observation technologies. Interactive lectures will be interspersed with short videos, in-class discussions, demonstrations, and mapping exercises. Class time will be used for conceptual refinement and skill acquisition.

Course Goals:

- 1) Demonstrate an understanding of local, regional, and global weather patterns and the role of radiation, pressure and atmospheric moisture on these patterns.
- 2) Demonstrate an understanding of the earth as a system and how energy and mass flows within/between spheres of the earth system.
- 3) Demonstrate an understanding of the tools used in physical geography including: observational data (e.g. daily temperature or streamflow records), landscape characteristics (e.g. cloud morphology, watershed studies, plant geography), and maps of world climate zones, landforms, and biomes.
- 4) Demonstrate an understanding of earth systems thinking as it is applied to climate change.

Reading Materials:

1) **Mandatory textbook:** McKnight's Physical Geography: A Landscape Appreciation, 12th edition, Books a la Carte Plus MasteringGeography with e Text. Available through UVM bookstore or digitally (see Blackboard for digital textbook access instructions).

Some quizzes and exercises will be assigned from [MasteringGeography](#)

2) Other reading materials will be made available either on Blackboard or as in-class handouts

Assignments and Grading:

Your overall grade will be composed of the following elements. Late assignments will not be accepted **except under documented extenuating circumstances** made prior to the assignment's due date.

Homework Exercises	25%
Quizzes	15%
Midterm Exam	25%
Final Exam	25%
Term Project	10%

- Homework Exercises (25%) – Homework exercises will be a combination of MasteringGeography and written assignments. These exercises are designed to allow you to practice basic calculations, interpretation, and the synthesis of course material.
- Quizzes (15%) – Weekly quizzes will be posted on Blackboard and will cover readings and lecture material. These will be timed quizzes and are meant to keep you up to date with course material and serve as a check-in on your understanding.
- Exams (50%) – The midterm and final exam are each worth 25% of your course grade. The midterm will cover material from day one to that point and the final exam will be cumulative. Study sessions will be held by our TAs prior to exams.
- Term Project (10%) – The term project provides an opportunity to explore a course topic in more depth and present it to peers at the end of the semester. Projects could include a poster or demonstration. More details on project expectations will be provided by mid-semester.

Grading Policy:

97–100 = A+	83–86 = B+	71–74 = C+	59–62 = D+	< 51 = F
91–96 = A	79–82 = B	67–70 = C	55–58 = D	
87–90 = A-	75–78 = B-	63–66 = C-	52–54 = D-	

Class Policies:

- This is a 3-credit course and meets the non-lab science requirement for College of Arts & Sciences students. As such, students are expected to devote time weekly to both mandatory class attendance and to out-of-class reading, online quizzes and homework assignments. We have structured the course so that this out-of-class work should require roughly 6 hours per week of your time, in accordance with the credit hour policy (for explanation, see <http://catalogue.uvm.edu/undergraduate/enrollmentregistration/registration/>).
- Students are expected to review course readings (on the syllabus) before each class, attend every class, take notes, ask questions, and hand in assignments when they are due.

- Mutual respect is expected, as is a level of professionalism that is conducive to learning in the classroom. Disruptive students will be asked to leave the class.
- Cell phones are to be turned off before class starts and cell phone use is not permitted. Laptops may be used during class for course related purposes, recreational use will not be tolerated. If you plan to take notes on your laptop please sit in a location where you will not be distracting to other students.
- Students are encouraged to attend instructor and/or TA office hours (or make appointments to meet) regularly if you have questions on course content, homework exercises, or exams.

University Policies:

- **Student Accessibility Services (SAS):** Students request academic adjustments or accommodations through a Student Accessibility Services Specialist. If the situation justifies it and is supported by appropriate documentation, the academic adjustment or accommodation requested will be approved and communicated to the faculty member through an accommodations letter. Students are advised that SAS consults with faculty based on a student's needs and the impact of the disability in relation to the requirements of the course. Please provide us with the relevant myACCESS letter within the first two weeks of class and then schedule an appointment with us to review accommodations in GEOG 040.
- **Athletic-Academic Conflicts:** Students participating in inter-collegiate athletics should plan their schedules with special care, recognizing the primary importance of all of their university academic responsibilities. Each semester, members of UVM varsity and junior varsity teams are responsible for documenting in writing any conflicts between their planned athletic schedule and the class schedule to their instructors by the end of the second full week of classes. Students and instructors should then discuss potential conflicts between course requirements and intercollegiate competitions. When an unavoidable conflict exists, the student and instructor should seek a resolution which permits the student to address the course requirement and participate in the athletic competition. The instructor has final authority on this matter.
<http://catalogue.uvm.edu/undergraduate/academicinfo/rightsandresponsibilities>
- **Academic Integrity:** The principal objective of the Academic Integrity Code is to promote an intellectual climate and support the academic integrity of the University of Vermont. Academic dishonesty or an offense against academic honesty includes acts that may subvert or compromise the integrity of the educational process. Such acts are serious offenses that insult the integrity of the entire academic community. Each student is responsible for knowing and observing this code. Please refer to the Code of Academic Integrity policy webpage at <http://www.uvm.edu/~vmppg/ppg/student/acadintegrity.pdf>
- **Religious Holidays:** Students have the right to practice the religion of their choice. If you need to miss class to observe a religious holiday, please submit the dates of your absence to me in writing by the end of the second full week of classes. You will be permitted to make up work within a mutually agreed-upon time. <https://www.uvm.edu/registrar/religious-holidays>

Course Schedule:

Note: Contents and timing of the course schedule are subject to change at the instructors' discretion

Week	Date	Topic(s)	Text Chapter	Instructor
1	January 14	Introduction	1: 1–17; 2, 3; Appendix II	Dr. Beverley Wemple
	January 16			
2	January 21	Earth-Sun relationship and Radiation	1: 17–27	Dr. Dupigny-Giroux
	January 23			
3	January 28	Earth's energy balance	4	Dr. Dupigny-Giroux
	January 30			
4	February 4	Atmospheric pressure, winds, and global circulation	5; Appendix IV	Dr. Dupigny-Giroux
	February 6			
5	February 11	Atmospheric moisture, clouds, and precipitation	6: Appendix III	Dr. Dupigny-Giroux
	February 13			
6	February 18	Thunderstorms, tornadoes, and hurricanes	7: 187–205	Caitlin Crossett
	February 20			
7	February 25	Air masses and fronts	7: 175–186	Caitlin Crossett
	February 27			
8	March 3	Town Meeting Day Recess - No Class		Caitlin Crossett
	March 5	MIDTERM EXAM		
9	March 10	Spring Recess - No Class		
	March 12			
10	March 17	Teleconnections and Ocean Circulation	5: 131-135	Caitlin Crossett
	March 19			
11	March 24	Climate change - Processes and impacts	8: 232–249	Caitlin Crossett
	March 26			
12	March 31	Climate-biosphere connections, biogeography	8: 206-232, 10:280-286, 296-297 11:323-337	Dr. Beverley Wemple
	April 2			
13	April 7	Geomorphology of glaciated landscapes	19	Dr. Beverley Wemple
	April 9			

14	April 14	Environmental change and flood dynamics	9: 252-254 16: 468-480	Dr. Beverley Wemple
	April 16			
15	April 21	Evolution of rivers and floodplains	16: 480-495	Dr. Beverley Wemple
	April 23			
16	April 28	Course wrap-up		Dr. Dupigny-Giroux/ Caitlin Crossett
	April 30			
FINAL EXAM: THURSDAY, 07-MAY-2020 4:30 – 7:15 PM in LAFAYETTE 108				