

GEO 215
GLOBAL ENVIRONMENTAL CHANGE

Fall 2022
MW 12:45-1:40pm
202 Hall of Languages

Instructor: Professor Tom Perreault (he/him/his)
Office: 307 Maxwell Hall
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Office hours: By appointment on Mondays, Wednesdays or Fridays

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Office hours: Wednesdays, 2:00-4:00pm

Lecture: Mondays and Wednesdays, 12:35-1:40, Hall of Languages, room 202

Discussion sections:

M002: Thursdays 3:30-4:25pm, Hall of Languages, room 107
M003: Fridays 10:35-11:30am, Hall of Languages, room 111
M004: Fridays 11:40am-12:35pm, Hall of Languages, room 102

Together with Syracuse University, I acknowledge with respect the Onondaga Nation, firekeepers of the Haudenosaunee Confederacy, the indigenous peoples whose ancestral lands were stolen by white settlers and the U.S. and New York State governments. Syracuse University and what we now call Central New York are located on Onondaga Nation territory.

Course Description:

This course is an introduction to global environmental change. The emphasis will be on understanding the physical and social processes and patterns of terrestrial, atmospheric, and climatic changes. The course objectives will be to develop an understanding of i) basic earth system processes and the mechanisms that lead to environmental change, and ii) the human impact on earth systems, its effects on the global environment, and the ways in which these changes in turn affect humans. In particular, we will examine the ways in which human activities affect the land, water, and atmosphere, including topics

such as land-use and land-cover changes (e.g., deforestation), land degradation (e.g., soil erosion), biodiversity loss, water pollution, and climate change.

Prerequisite/Co-requisites:

This class is worth 3 credits. There are no prerequisites. However, an introductory physical geography or earth science course (e.g., GEO 155 or GOL 105) is recommended. This course is part of the A&S Core *Natural Science and Mathematics sequence* (Geo 155 The Natural Environment – Geo 215 Global Environmental Change) and fulfills requirements in the *Environment & Society minor* and the *Environment, Sustainability and Policy major*.

Learning Objectives:

After taking this course, the students will be able to:

- Explain physical processes relating to environmental changes
- Compare and contrast rates and scales of environmental changes
- Critically assess data presenting global environmental change
- Explain the relation between human and natural drivers of global change
- Synthesize, in writing, natural and human drivers of global environmental change
- Critically read scientific literature on global environmental change

This course fulfills the following geography undergraduate program learning objectives:

- Explore and critically reflect on geographic issues, concepts, and debates
- Identify, locate, evaluate, use, and share information as it pertains to geography
- Articulate what a geographic perspective brings to our understandings of a changing world and its human and environmental dynamics
- Describe and explain the changing relationship between humans and the environment and its different form over time and across space
- Describe and explain features of the physical environment, including patterns and causal processes, and variations over time and across space

Textbook and required readings:

Required texts:

We will use a mix of readings from a variety of sources (e.g., book chapters, journal and news articles) as well as using the following required textbook:

Environment: The science behind the stories by Withgott and Laposata, 7th Edition, Pearson, New York, 2021.

Important: The textbook will be available through Orange Instant Access. You are automatically enrolled, and your required course texts will be accessible via Blackboard – all you need to do is log in. The cost of your materials will be charged to your Bursar account. You may opt out of Orange Instant Access if you have another way of accessing the book. Instructions to opt out will be sent to you electronically.

Assignments and grading:

A total of 150 points will be available from discussion sections grades. This will be distributed among a map assignment, five pop quizzes, and an overall attendance and participation grade. Additionally, there will be three exams worth 100 points each.

Grading is as follows:

Discussion Section:

Map Assignment	50 points
Reading Quizzes (5x10 points each)	50 points
Attendance & Participation	50 points
Discussion Total	<hr/> 150 points

Lecture:

Exam 1 (February 16)	100 points
Exam 2 (March 30)	100 points
Exam 3 (May 4)	100 points
Lecture Total	<hr/> 300 points

CLASS TOTAL **450 points**

Grading policy (please read this carefully):

Despite what you might think, this is not an easy class. It requires careful and critical reading and writing, regular attendance in lecture and active engagement in discussion sections. Exams are a mix of short-answer essays, definitions, diagrams and other questions (not multiple choice). Please note the following:

- All assignments must be submitted on or before the date indicated on the syllabus. We do not accept late work without prior permission. Anything turned in late without prior permission will receive a score of zero. There will be no exceptions.

- Writing assignments should be proofread and free of spelling and grammatical errors. Sloppy work will be penalized at the discretion of the TA.
- Submit hard copies of your assignments to the TA in discussion section. We will not accept electronic versions of assignments without prior permission.
- Be sure to number and staple your pages. Unstapled papers, or papers with un-numbered pages will be marked down one-half letter grade. Concept papers must be printed properly. Handwritten work will not be accepted.
- Save electronic versions of all your assignments, as well as the graded hard copies you get back from the TA. These may be necessary in case of any assignments get lost, or if there are disputes or questions regarding your grade.

What grades mean

Grading in this class is as follows:

A = 93-100%

A- = 90.0-92.9%

B+ = 87.0-89.9%

B = 83.0-86.9%

B- = 80.0-82.0%

C+ = 77.0-79.9%

C = 73.0-76.9%

C- = 70.0-72.9%

D = 60.0-69.9%

F = 59.9% and lower

Interpreting grades

Grades	Meaning
A, A-	Superior work with few or no factual or analytical problems; writing is clear and free of mechanical errors; demonstrates a clear and nuanced understanding of the concepts addressed.
B+, B, B-	Good work with relatively few factual or analytical problems; essays contain few mechanical errors; demonstrates a good understanding of concepts and some sophistication in interpretation
C+, C, C-	This is an average grade. It demonstrates some understanding of concepts, but with considerable room for improvement in writing and analysis. Essay contains a core argument but is analytically weak and contains some errors.
D	Essay contains several factual and/or interpretive errors and demonstrates little understanding of core concepts and little evidence of having done the readings.
F	Unacceptable work that demonstrates little or no understanding of core concepts. Contains numerous errors and interpretive problems.

COURSE POLICIES, EXPECTATIONS AND PRACTICES

Communications with Professor Perreault and Katie MacDonald

You are expected to check your SU email daily, as that will be the medium of all electronic communications with Professor Perreault (taperrea@syr.edu) and Katie MacDonald (your TA, kmacdona@syr.edu). All announcements regarding changes to class readings or assignments, as well as interesting websites, articles, videos or events, will be announced via email.

Classroom Etiquette

Please use common sense and common courtesy in your behavior in lecture and discussion section. Arrive to class on time. If you must arrive late, please enter the room quietly and don't let the door slam behind you. Please don't talk or read during class. Persons behaving in a discourteous manner will be asked to leave the classroom. Remember that we are still in a pandemic and all students are expected to follow university guidance regarding masking. It is your responsibility to understand and follow the University's color-coded alert system. Any students knowingly *not* following university guidance will be asked to leave class and may face disciplinary measures. Classroom behavior will be considered in factoring final grades.

Personal Electronics

Unless you make special arrangements at the beginning of the semester, the use of personal electronics is not permitted in this class. Please be sure that your cell phone is silenced before coming to class. Texting, emailing, or browsing the web during class will not be tolerated. You will need to take notes the old-school way: with pen and paper. Anyone using electronic devices during lecture will be asked to leave.

Academic Integrity

Syracuse University's Academic Integrity Policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same work in more than one class without receiving written authorization in advance from both instructors.

One of the most common violations of academic integrity is plagiarism. Put simply, plagiarism is using someone else's work and passing it off as your own. It is essential that you understand what plagiarism is, and how to avoid it. Plagiarism is a serious academic offense and will result in a grade of 'F' for the course. Students are responsible for knowing University definitions and rules regarding academic

honesty. For further information, see SU's [Academic Integrity Policy](#) and the [Academic Integrity Violations Rubric](#).

Student Athletes

If you are a student athlete, we will do our best to accommodate your travel and competition schedule. Please provide Dr. Perreault with necessary forms, and make arrangements with your TA, well in advance of your expected absences. Go Orange!

Disability-Related Accommodations

Students who are in need of disability-related academic accommodations must register with the Center for Disability Resources, 804 University Avenue, Suite 303 (315-443-4498, disabilityresources@syr.edu). Students with authorized disability-related accommodations should provide a current Accommodation Authorization Letter from Disability Resources to Dr. Perreault and review those accommodations with him. Accommodations, such as exam administration, are not provided retroactively; therefore, planning for accommodations as early as possible is necessary. For further information, see the Disability Resources website, Center for Disability Resources <http://disabilityresources.syr.edu>.

The CDR is responsible for coordinating disability-related academic accommodations and will work with the student to develop an access plan. Since academic accommodations may require early planning and generally are not provided retroactively, please contact CDR as soon as possible to begin this process.

My goal as your instructor is to create a learning environment that is useable, equitable, inclusive and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, I invite you to contact me to discuss additional strategies beyond accommodations that may be helpful to your success.

Statement on COVID-19

Syracuse University is currently planning for the Fall 2022 semester to be conducted entirely through in-person instruction, using classrooms at their normal capacities. All students are required to be vaccinated against COVID-19 and follow the university's guidance regarding masking and isolating in case of infection. Make sure you are aware of the university's current guidance. Members of the campus community who are not vaccinated against COVID-19 are expected to wear masks while on campus and be tested regularly. Anyone who tests positive for COVID-19 is expected to isolate for five days (or however long they are directed by their doctor and according to university guidance). Any student or instructor may choose to wear a mask in class, regardless of current guidance, if they wish.

The COVID-19 pandemic has taken a physical and mental toll on many of us. Mental health and overall well-being are significant predictors of academic success. It is therefore essential that you develop the skills and resources effectively to navigate stress, anxiety, depression, and other mental health concerns. Please familiarize yourself with the range of resources the Barnes Center provides (<https://ese.syr.edu/bewell/>) and seek out support for mental health concerns as needed. Counseling services are available 24/7, 365 days, at 315-443-8000, and I encourage you to explore the resources available through the Wellness Leadership Institute, <https://ese.syr.edu/bewell/wellness-leadership-institute/>

Faith Tradition Observances:

[Syracuse University's Religious Observances Policy](#) recognizes the diversity of faiths represented in the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their traditions. Under the policy, students are given an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance, provided they notify their instructors no later than the academic drop deadline. For observances occurring before the drop deadline, notification is required at least two academic days in advance. Students may enter their observances in MySlice under Student Services/Enrollment/My Religious Observances/Add a Notification.

Discrimination or harassment:

The University does not discriminate and prohibits harassment or discrimination related to any protected category including creed, ethnicity, citizenship, sexual orientation, national origin, sex, gender, pregnancy, disability, marital status, age, race, color, veteran status, military status, religion, sexual orientation, domestic violence status, genetic information, gender identity, gender expression or perceived gender.

Any complaint of discrimination or harassment related to any of these protected bases should be reported to Sheila Johnson-Willis, the University's Chief Equal Opportunity & Title IX Officer. She is responsible for coordinating compliance efforts under various laws including Titles VI, VII, IX and Section 504 of the Rehabilitation Act. She can be contacted at Equal Opportunity, Inclusion, and Resolution Services, 005 Steele Hall, Syracuse University, Syracuse, NY 13244-1120; by email: titleix@syr.edu; or by telephone: 315-443-0211.

The instructor and TA commit to treat all students enrolled in the class fairly, respectfully, and equally. Diverse backgrounds and perspectives that students bring to this class will be viewed as a resource, strength, and benefit. Collaboration among students is encouraged. Please let us know ways to improve the effectiveness of the course for you or for other students.

Mental Health and Well-being

Mental health and overall well-being are significant predictors of academic success. As such it is essential that during your college experience you develop the skills and resources effectively to navigate stress, anxiety, depression and other mental health concerns. Please familiarize yourself with the range of resources the Barnes Center provides (ese.syr.edu/bewell) and seek out support for mental health concerns as needed. Counseling services are available 24/7, 365 days, at 315.443.8000. I encourage you to explore the resources available through the Wellness Leadership Institute (<https://ese.syr.edu/bewell/wellness-leadership-institute/>)

Add/drop and withdraw petitions:

The Academic Drop Deadline and the Financial Drop deadline will both occur on Monday, September 19, 2022. If you withdraw from course after this deadline this would place a 'WD' grade on your transcripts. It is the policy of the Geography Department that students must obtain FIRST the signature of the instructor and THEN the signature of the department chair if they wish to drop or withdraw from this course.

Use of Class Materials and Recordings

Original class materials (handouts, assignments, tests, videos etc.) are the intellectual property of the course instructor. You may download these materials for your use in this class. However, you may not provide these materials to other parties (e.g., web sites, social media, other students) without permission. Doing so is a violation of intellectual property law and of the student code of conduct.

COURSE SCHEDULE				
Week #	Dates	Topics	Reading assignment	Discussion section
PART I: SYSTEMS AND CONCEPTS				
1	August 29	Course introduction		Introductions
	August 31	Global environmental change	W&L: chap. 1	
2	Sept. 5	<i>No class today (Labor Day)</i>		Concept review
	Sept. 7	Earth systems I: Lithosphere	W&L: chap. 2	
3	Sept. 12	Earth systems II: Atmosphere	W&L: pp. 452-455, + chap. 4	Concept review
	Sept. 14	Earth systems III: Ecosphere		
4	Sept. 19	Ecosystem ecology	W&L: chap. 5, 15	Review for Exam 1
	Sept. 21	Earth systems IV: Hydrosphere		
5	Sept. 26	The global ocean	W&L: chap. 16	No discussion section
	Sept. 28	EXAM 1		
PART II: PROCESSES OF ENVIRONMENTAL CHANGE				
6	October 3	Fossil Fuels	W&L: chap. 19	Concept review
	October 5	Agriculture	W&L: chap. 9	
7	October 10	Biodiversity loss	W&L: chap. 11, 12	Role play exercise #1
	October 12	Deforestation		
8	October 17	Climate change 1	W&L: chap. 18	Review for Exam 2
	October 19	Climate change 2		
9	October 24	Catch up and review	<i>No new readings</i>	No discussion section
	October 26	EXAM 2		
PART III: HUMAN DIMENSIONS OF GLOBAL CHANGE				
10	October 31	Vulnerability, adaptation, resilience, and sustainability	W&L: chap. 6, pp. 266-269;	Begin map assignment; concept review
	Nov. 2		Finer	
11	Nov. 7	Resource extraction and the green transition	Perreault (a); Riofrancos;	Google Earth exercise
	Nov. 9	Electrification and post-carbon futures	Economist	
12	Nov. 14	The changing nature of wildfire	UNEP Report, chap. 1-2 (pp. 19-54)	Role play exercise #2
	Nov. 16			Map assignment due
13	Nov. 21	THANKSGIVING BREAK – NO CLASSES		
	Nov. 23			
14	Nov. 28	Deglaciation and rural livelihoods in Peru	Fraser	Concept review and exam preparation
	Nov. 30	The drying of Lake Poopó, Bolivia	Perreault (b)	
15	December 5	Catch up and review	<i>No new reading</i>	No discussion section
	December 7	EXAM 3		

Bibliography

Economist 2022. "Electrical tension;" "Beyond batteries;" and "The long goodbye" in *The Energy Transition* (special report on climate technology), *The Economist*, 25 June.

Finer, et al. 2008. Oil and gas projects in the western Amazon: Threats to wilderness, biodiversity, and indigenous peoples. *PLoS One*, 3(8), e2932.

Fraser, Barbara 2012. Goodbye glaciers, *Nature*, 491: 180-182.

Perreault, Tom 2020a. Bolivia's high stakes lithium gamble. *NACLA Report on the Americas*, 52(2): 165-172.

Perreault, Tom 2020b. Climate change and climate politics: Parsing the causes and effects of the drying of Lake Poopó, Bolivia. *Journal of Latin American Geography*, 19(3): 26-46.

Prieto, Manuel, Diego Salazar, and María Jesús Valenzuela 2019. The dispossession of the San Pedro de Inacaliri river: Political ecology, extractivism and archaeology. *The Extractive Industries and Society*, 6: 562-572.

Riofrancos, Thea 2019. What green costs. *Logic Magazine*, December 7.

UNEP 2022. "Spreading like wildfire: The rising threat of extraordinary landscape fires." Nairobi: United Nations Environmental Program.