

Global Climate

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220 Bewkes Hall, 229-5470

TEXTS: *Jet Stream*, National Weather Service, <https://www.weather.gov/jetstream/>
METEO 3: Introductory Meteorology, Penn State U., <https://www.e-education.psu.edu/meteo3/>
Braiding Sweetgrass, Robin Wall Kimmerer https://en.wikipedia.org/wiki/Braiding_Sweetgrass

WEB SITE: <http://myslu.stlawu.edu/~aodo/SLU/climate/index.htm>

INFORMATION AND LECTURE FILES: T:\Global Climate

Science is simply a long and careful look beneath and beyond the world's skin. In the same field where I see only a muddle of anonymous green, Henry David Thoreau, scientist of Walden Pond, saw infinite variety: cotton grass, foxtail, life-everlasting, goldenrod, Saint Johnswort, mullein, meadowsweet. An astronomer sees a sky far richer than mine, filled with quasars and pulsars, galaxies and nebulas. In all that bickering at the bird feeder, an ornithologist sees pair bonds and pecking order. In that annoying rock dug out of the strawberry patch, a geologist sees grey granite left in the 10,000-year-old path of glaciers. This new depth of seeing has taken us from the beetles in our own back yards to the particles inside the atom and the gaseous glow at the end of the universe.

— Rebecca Rupp

Global Climate is intended for students not majoring in science. It fulfills a distribution requirement, which means that besides having no pre-requisites, it must fulfill the rationale and definitions agreed upon by the St. Lawrence University faculty in the fall of 2012¹:

4. NATURAL SCIENCE WITH LAB (NSM-L): COURSES HAVE PRIMARY LEARNING GOALS IN WHICH STUDENTS DEVELOP:

A. AN UNDERSTANDING OF THE PHYSICAL, CHEMICAL, BIOLOGICAL, AND/OR BEHAVIORAL PHENOMENA OF THE NATURAL WORLD AND, INsofar AS POSSIBLE, AN ABILITY TO RELATE THEM TO EVERYDAY EXPERIENCE; AND

B. A THEORETICAL AND QUANTITATIVE UNDERSTANDING OF THE PROCESSES UNDERLYING THE PHYSICAL, CHEMICAL, BIOLOGICAL, AND/OR BEHAVIORAL PHENOMENA OF THE NATURAL WORLD; AND

C. AN UNDERSTANDING OF HOW SCIENTIFIC KNOWLEDGE OF THE NATURAL WORLD IS OBTAINED AND REVISED THROUGH HYPOTHESIS TESTING USING EXPERIMENTAL AND/OR OBSERVATIONAL METHODOLOGIES.

IN ADDITION, NATURAL SCIENCE LAB COURSES ARE REQUIRED TO INCLUDE A REGULARLY SCHEDULED LABORATORY COMPONENT THAT MEETS WEEKLY FOR AT LEAST 90 MINUTES, IN WHICH STUDENTS HAVE THE OPPORTUNITY TO EXAMINE PHENOMENA OF THE NATURAL WORLD USING EXPERIMENTAL AND/OR OBSERVATIONAL METHODS.

¹ Curriculum Revisions, Part II passed on 5/8/12, copies available in the Registrar's office.

COURSE PHILOSOPHY: AS AN INTERDISCIPLINARY SCIENCE COURSE

Each course is an opportunity for me to stir every student's sense of wonder and to broaden the way they see the universe. This universe is an amazingly elegant and wondrous place. The Earth is a strikingly unique place where liquid water falls from the sky, life strives to fill every crevice and landscape, and some creatures look up to the sky in wonder.

In *Global Climate*, we will strive to provide an expanded historical and geological context within which to understand the working of Earth's climate and the scientific work of learning to understand its processes. I will also nurture a familiarity and appreciation that I hope will fuel a life-long interest in weather, climate, and the science and health of the atmosphere.

EXPECTATIONS

As your professor, I endeavor to make every class engaging and informative, utilizing all the resources available. Unless I am seriously ill or have unavoidable travel, I will be at every class prepared to lead you on an intellectual journey from the depths of the Earth to the top of the atmosphere and beyond. On every task and assignment, I will do all humanly possible to help you succeed and understand.

Since you've expressed interest in global climate by signing up for the class, I expect you to be open to exploring the Earth and its atmosphere and willing to participate fully in activities designed to engage you in that exploration. **This requires you to come to every class during the semester and remain in class for the full time unless you are ill. We'll go no longer than an hour without a break, so you should not have to leave class other than during breaks. It's rude to leave while someone is speaking.**

Participating fully in class requires you to be an active learner, that is, I expect you to take notes, by hand during lectures. The Power Point presentations will be available before class. You may print them out and take notes on them or on separate paper. You don't need to write down every piece of information (you can access the Power Points after class to get details you miss), but you need to write down the big ideas and information from what I say as well as what is on the slides. Passively listening to the lectures will not lead to success in this course.

Modern science, particularly study of the climate that utilizes large multi-national instruments, is a collaborative human activity. To model this for those of you in what may be your last science class, almost all of our activities are collaborative. The lab exercises you will do and even the exams have collaborative sections. **Though all the words you write must be your own, you will discuss the ideas with your peers. In order for everyone in the class to be fully invested, it is not an option to take the course pass-fail.**

COURSE REQUIREMENTS:

- 1) Attendance - Attendance (+ labs) is required and will count for 20%,
- Arrive on time and stay for the entire time, a break will be given
- 2) Lab Work - Exercises must be completed and handed in during the lab period
- Average will be combined with the attendance score
- 3) Exams - Two will be given as scheduled in the calendar (40% MT, 25% F)
- 4) Projects - United States Winter 2020 Project (40% MT, 35% F)
- Climate Symposium Presentations (Wed. May 6, 2020, 20% F)

FINAL GRADE will be a simple average of all of the above grades, scaled to

4.0	3.75	3.5	3.25	3.0	2.75	2.5	2.25	2.0	1.75	1.5	1.25	1.0	0.0
>94%	91-94	88-91	85-88	82-85	79-82	76-79	73-76	70-73	67-70	64-67	61-64	58-61	<58

with the instructor's subjective freedom for the treatment of borderline cases!

SAKAI

Lecture Power Points in the Resources Folder

WEBSITE: <http://myslu.stlawu.edu/~aodo/SLU/climate/index.htm>

Class Documents (syllabus, calendar, texts, information about Aileen)

Weather & Climate web links, Assignment lists, copies, due dates, and solutions

THE WORD STUDIO: [MAILTO:WORDSTUDIO@STLAWU.EDU](mailto:wordstudio@stlawu.edu)

Located in Owen D. Young Library, the WORD Studio offers both online and face-to-face tutorials for your papers, speeches, posters, and reading assignments. We want to make you the best writer and speaker you can be at SLU. Our tutors are thoroughly trained and friendly peers who can:

- Help you understand an assignment
- Help you build an argument or structure in papers and oral presentations
- Help you expand your vocab and work on sentence structure
- Work with you on a powerpoint or poster
- Refine your reading skills
- Help you learn to avoid plagiarism through proper citation

The WORD Studio offers ESL and science writing specialists, but all of our tutors are trained to assist with any communication assignment. The WORD Studio is open until 9pm Sunday-Thursday, and until 2pm on Fridays, but appointments are required. Schedule a tutorial by going to the WORD Studio website.

STUDENT ACCESSIBILITY SERVICES: <mailto:studentaccessibility@stlawu.edu>

If you have a learning difference/disability or other health impairment and need accommodations please be sure to contact the **Student Accessibility Services Office** right away so they can help you get the accommodations you require. If you need to use any accommodations in this class, please meet with your instructor early and provide them with your Individualized Educational Accommodation Plan (IEAP) letter so you can have the best possible experience this semester.

Although not required, your instructor would like to know of any accommodations that are needed at least 10 days before a quiz or test. Please be proactive and set up an appointment to meet with someone from the Student Accessibility Services Office.

Color-Vision Deficiency:

If you are Color-Vision Deficient, the Student Accessibility Services office has on loan glasses for students who are color vision deficient. Please contact the office to make an appointment.

For more specific information about setting up an appointment with Student Accessibility Services please see the listed options below:

Telephone: (315) 229-5537

Email: studentaccessibility@stlawu.edu

Website: <https://www.stlawu.edu/student-accessibility-services>

The Peterson Quantitative Resource Center (PQRC): <mailto:pqrc@stlawu.edu>

Located in Valentine Hall, it offers free, no appointment necessary peer tutoring across a range of courses with quantitative content. The PQRC student staff of mentors is trained to assist students to develop and to improve their quantitative skills and understanding. More information about the PQRC's current hours and modes of operation can be found at the PQRC webpage.