

## **ATMOS 1020 Climate Change**

Spring 2022

Tuesday & Thursday, 10:45 – 12:05 pm, online (IVC)

Class Number 6751

<b>Instructor</b>	Thomas Reichler
<b>Email</b>	thomas.reichler@utah.edu
<b>Phone</b>	801-585-0040
<b>Office Hours</b>	I have no specific office hours. My preferred method of communication is email or Zoom; best time for Zoom is immediately after lecture; you are also welcome to visit my office, but then it is best to make an appointment by email to make sure I am around.
<b>Office Location</b>	WBB 804
<b>Class Location</b>	CANVAS
<b>Class Web Page</b>	<a href="https://utah.instructure.com/courses/750141">https://utah.instructure.com/courses/750141</a>
<b>Zoom Meeting Link</b>	<a href="https://utah.zoom.us/j/95159010561">https://utah.zoom.us/j/95159010561</a>
<b>Zoom Meeting ID</b>	951 5901 0561
<b>Zoom Passcode</b>	490530
<b>Required Materials</b>	none
<b>Supplemental Reading</b>	Robert Henson (2011): The Rough Guide to Climate Change, 2nd or 3rd edition. Available at the U bookstore or at amazon. Note: this text is NOT required.

**Course Description:** Climate change is one of the most pressing issues of our time. Scientists warn that if we ignore the problem, by the end of this century the changes will be catastrophic. But why is climate changing, how certain is it that humans are to blame, what are the impacts of climate change, and what can be done to address the problem? This introductory course of climate change will answer each of these questions and explore the underlying scientific evidence.

ATMOS 1020 is a three-unit, introductory course on climate change, designed for students of all backgrounds. There are no prerequisites. The course is mostly descriptive and requires only very basic math skills. The course fulfills Physical/Life Sciences Exploration (SF), Limited Sustainability (SUSL), and adheres to university policies regarding its content.

**Course Outcomes:** Knowledge of this course will allow you to critically evaluate what you hear about climate change in the public. In particular, after completing this course, you will be able to

- understand what climate is and how it differs from weather
- recognize the difference between natural and anthropogenic climate change
- know the reasons for climate change, including the atmospheric greenhouse effect

- understand the consequences of climate change
- find out what can be done to address the problem

**Teaching and Learning Methods:** The format of the course will be primarily lecture and class discussions. I try to make this class interesting and present PowerPoint slides that contain lots of visuals: illustrative photos, schematics, graphics, and videos. The class will be delivered online through Zoom (lecture) and CANVAS (homework, quizzes, lecture slides, grades).

### Important Dates

First class: Tuesday, January 11

Spring break: March 6-13

Last class: Tuesday, April 26

### Approximate Course Schedule

There will be 15 modules during the semester and each module will last ~1 week:

Module	Week	Topic
1	1	Introduction, course policies
2	1	Weather and climate
3	2	ENSO and the Antarctic Ozone Hole
4	3	Greenhouse effect
5	4	Greenhouse gases
6	4	Greenhouse gas emissions
7	5	Climate forcings
8	6	Climate feedbacks
9	7	Evidence for past climate change
10	8	Heat waves
11	9	Floods and droughts
12	10	Ice and snow
13	12	Oceans
14	13	Hurricanes
15	14	Climates of the past
finals week		no exam

**Strategies for Success:** This course builds upon itself: you must understand previous material before you will be able to understand new material. If you do not attend class regularly or fall behind on reviewing the material you will find this course difficult. If you do fall behind, be sure to take advantage of the available resources. Experience shows that the following is necessary to receive a reasonable grade in this course:

- attend, review, and understand all lectures: copies of the lecture slides will be made available electronically through CANVAS after each lecture. Quizzes that count towards your grade will also be given during lecture at irregular intervals.

- complete all homework assignments. They help you understand the material and count towards your final grade.
- don't be afraid to ask questions during or after lecture, or contact me at any other time (best per email first) if you have questions. Seek help immediately when needed.

### **Course Policies**

- You are expected to maintain professional behavior during the lectures and be respectful to others.
- You must obey to the Student Code <https://regulations.utah.edu/academics/6-400.php> and are expected to read the Code and know its content.
- Plagiarizing, copying, cheating, or otherwise misrepresenting ones' work will not be tolerated and will be dealt with following University policy.
- You have to solve all home works and quizzes by yourself, no collaboration or external help of any kind.
- Helping or attempting to help another also represents an act of academic misconduct. Do not break the scientific code of honor!
- Attendance is not taken, but missing a class will result in a lack of understanding and a zero grade if there is a quiz.
- Class policies and requirements may be modified during the semester as necessary.

**Zoom Lectures:** The lectures will be entirely online using Zoom. Although Zoom can be run from a web browser, it is best to install the Zoom app. You are expected to attend every lecture, participate in the online discussions, and review the online lecture material after each class. The Zoom meeting link is <https://utah.zoom.us/j/95159010561> and the passcode is **490530**. Please turn off your microphone during the lecture except when you have a question. It is best to use the Zoom “hand symbol” to signal that you have a question. If you talk, don’t forget to turn your microphone on (e.g., by hitting the space key).

**CANVAS:** This course depends on CANVAS to submit your assignments, access the lecture slides, and view your grade. The link to this class is <https://utah.instructure.com/courses/750141>. If you are not familiar with the system you can find help from the University Teaching and Learning Technologies (TLT) at <https://support.tlt.utah.edu>. CANVAS will also be used to make available some of the recordings of the lecture. CANVAS can be opened in any web browser or from the CANVAS app.

**Exams:** There will be no midterms and no final exam.

**Homework:** There will be about ten homework assignments, given at irregular intervals through CANVAS. Each assignment consists of about 30 multiple choice questions. All assignments combined are worth 80% of the total grade. You must complete each assignment before the given due date. Once you have submitted an answer, you cannot change it later. If you are not satisfied with your score, you have another fresh attempt to submit your homework, and the highest score of your two attempts will be taken as your final grade.

**Quizzes:** Short quizzes will be held at irregular intervals. The quizzes need to be solved in CANVAS during ~3 minutes of lecture time. In order to do so, you need to be able to run on your device simultaneously CANVAS (to answer the questions) and Zoom (to follow the lecture). The quizzes consist of about three multiple choice questions, emphasizing material from the current or the previous lecture. The outcome from the quizzes will be 20% of the total grade. The three lowest quiz grades will be dropped. Excused absences from quizzes must be arranged prior to the quiz. Unexcused absences from quizzes will earn zero grade - no exceptions, no makeups.

**Grading Policy:** Final grades are based on the following scale:

- > 90 % guarantees an A or A-
- > 80 % guarantees a B+, B, or B-
- > 70 % guarantees a C+, C, or C-
- > 60 % guarantees a D+, D, or D-
- < 60 % may result in an E

There will be no opportunities for extra credit in this course. If you miss an assignment due to illness, you must provide medical documentation (i.e., a doctor's note) in order to make up missed work. Cutoff points for the specific grades are identified to define reasonable distribution of grades.

## University Policies

1. ***The Americans with Disabilities Act.*** The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services (CDS), 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.
2. ***University Safety Statement.*** The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit <https://safeu.utah.edu>.
3. ***Sexual Misconduct.*** Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are

encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

4. **COVID-19.** Please get **vaccinated** if you have not already done so. Visit <https://mychart.med.utah.edu>, <https://alert.utah.edu/covid/vaccine/>, or <https://vaccines.gov> to schedule your vaccination. If you are not yet vaccinated, get weekly asymptomatic coronavirus **tests**. You can schedule an appointment here: <https://alert.utah.edu/covid/testing/>. Follow CDC guidelines regarding face masks, which now call for everyone to wear face **masks** indoors. Students must self-**report** if they test positive for COVID-19 via this website: <https://coronavirus.utah.edu/>.
5. **Mental Health.** Rates of burnout, anxiety, depression, isolation, and loneliness have noticeably increased during the pandemic. If you need help, campus mental health resources are available, including counseling, trainings and other support. Consider participating in a Mental Health First Aid or other wellness-themed training provided by Student Affairs' Center for Student Wellness to help contribute to creating a healthier and safer campus community. These are designed to equip you to better recognize and respond to signs and symptoms of mental health and substance abuse challenges.

*Note: This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced in class and posted on Canvas under Announcements.*