

De Anza College
Physical Science, Mathematics & Engineering Division
Meteorology 12, Introduction to Climate Change

Section(s):	36945 Winter 2022
Instructor:	Terrence J. Mullens (Pronouns: They/Them/Theirs)
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Office Location	Online (at https://cccconfer.zoom.us/j/6625783048)
Office Hours (on Zoom):	M/W 11:30-12:20pm, T/Th 1:30-2:20pm, and by Appointment (i.e. let me know a time that works for you, and I'm happy to make it work!)*
Class Days/Time:	Mon/Wed 9:30-11:20am, PLUS, one hour independent.
Classroom:	Zoom (https://fhda-edu.zoom.us/j/97338445281?pwd=U2k0Q1JXYUI4QVB3RGFvYUVaZFJZUT09 Password: climate)
Prerequisites:	None (Some basic math skills may be helpful)

Introduction

This syllabus is like the “Terms of Service” that you agree to when you download iTunes or anything else off the internet. However, this is much shorter and I actually expect you to read it! Our first quiz will be heavily based off of it! Your continued enrollment is your agreement to abide by the terms and conditions outlined in this syllabus.

Course Description

Welcome to Climate Change at De Anza! Regardless of if a friend/counselor recommended this class to you, or you signed up because of RateMyProfessors, I'm really glad you're here! This course will cover all of the fundamental concepts behind the topic of Climate Change. This includes Global Warming, The Greenhouse Effect, Natural and Human-Caused Climate Change, Paleoclimatology, Climate Modeling, and Mitigation Strategies. We'll also cover areas of interest such as how current events relate to Climate Change, and the local impacts Climate Change.

Course Website and Communication

Everything you need for this course (Syllabus, Assignments, Lectures, etc.) can be found on the course page which can be accessed through Canvas. I will also make all communication (announcements/reminders, emails, etc) through the Canvas webpage. Please enable your Canvas settings to receive notification when an announcement is posted.

Also note that it is your responsibility to stay on top of assignments and deadlines... while I try my best to send out reminders often, a lack of a reminder isn't a valid excuse for missing work (just like in the working world). Once I announce any

assignment/deadline in class, any additional reminders (with the exception of necessary changes) are a courtesy.

***Office Hours:** Given the weird time we're in, office hours are quite a bit different... I am regularly and diligently checking my email during the scheduled times above, but may not be logged on to my zoom office at the moment you sign on (to save bandwidth in case I'm uploading other stuff)... if that is the case, wait a few moments... anytime someone logs on, I get a notification, and will instantly jump on. Also, if you would like to request an appointment, you can do so at <https://terrence-mullens-meeting-appointments.appointlet.com>

Textbook and Course Materials:

1. **Textbook:** "Climate Change: Causes, Consequences, and Solutions" by Arnold J. Bloom (2018). The textbook is a **free** online resource, which can be accessed at: <https://indd.adobe.com/view/8f2ed4a1-a1b0-4f12-b5bb-5009bbbada0f3>
2. **Computer with access to the internet and browser that meets Canvas' system requirements** (Info: <http://www.deanza.edu/online-ed/students/>)
3. **Recommended: A webcam and access to a printer and scanner (you can get by without them, but they will make your life easier).**

Contacting Me:

If you need to get a hold of me for any reason, you can email me directly at mullensterrence@fhda.edu, or via the messenger on Canvas. I check my email often during business hours, less often at nights/weekends (please don't feel discouraged if I don't immediately reply to an email sent at 2:30am). **If, you do not hear from me within 24 hours (48 hours on the weekend), please re-send your email.**

In the Classroom/Class Rules

How this class is going to work:

Because of the crazy circumstances we find ourselves in right now, I understand that many of you are in a different situation than you were in when you originally signed up for this class (unemployed, different work hours, or even back in your home country). As such, while the class is structured for Synchronous delivery (meaning regularly scheduled face-to-face class sessions), we can find alternatives for students who can no longer make our regularly scheduled time. Please inform me if you have any such situations.

Synchronous sessions: Many students still prefer a traditional face-to-face type of environment, with scheduled class sessions... I don't want to take those away from them, even in this time. Therefore, synchronous, face-to-face sessions will take place **every Monday/Wednesday at 9:30am on Zoom**. Attendance at these sessions is determined by completing the daily "participation question" along with any assigned in-class activities. During these sessions, we will do a mix of traditional lecture, discussion, and group activities. Links to any activities we do will be provided both on Canvas, and in Zoom during our class session. If you need to miss a session (or a bunch), that's okay...

I record them and post them to Canvas. You are expected to watch them, and complete any warm-up question within 48 hours of the scheduled class session.

Independent Sessions: As a Hybrid class, one hour of class time a week, is carved out for independent work. Quizzes will be assigned on even weeks, while Independent Climate investigations will be assigned on odd weeks. These activities make up the fifth hour of our 5-hour class week (with the other 4 hours being synchronous).

Issues/Grievances: While I try my best to make this class a positive learning environment, there is always the chance that either something I or someone else in class does might not sit well with you; if that is the case, I am more than happy to hear any grievances in private. I've found that 99.9% of any issues that arise are easily settled (and to everyone's satisfaction) by a brief conversation. With that said, be respectful and professional when approaching me about any issues that arise; grievances aired in a rude and disrespectful manner won't be considered, and won't help your case.

Attendance/Punctuality: Attendance will be taken in each class session via a participation question at the beginning of class, which will be worth 2 points. **Students who are late (meaning, they are completing the class session more than 48 hours after it was held) may still make up the participation question, but will only get half the possible points. Two late submissions will count as an absence for dropping purposes (see section on dropping*).** While most (if not all) class sessions will end on time, there may be a time or two where class runs a minute or two late. If you must leave immediately at the scheduled end time, you are more than free to do so without penalty. However, I ask that if you must leave, that you do so quietly and respectfully.

*****HUGE Personal Request: While I understand that some of you are in a situation where either you don't have a webcam, or aren't in a place where you feel safe using it, I implore you to please turn on your webcam if you have one, and feel safe using it. If you do not have a webcam, please create/upload an avatar or a profile picture that you can use. I know it's a lot, but I cannot tell you how tough it is lecturing to a bunch of black boxes on Zoom... I always do my best to be well prepared for class, but so much of this learning environment depends on your involvement as well.**

Leaving Class Early: While I understand that 1hr and 50mins is a long time (we used to offer 50minutes/day sections of this class, but no one was signing up for them), I expect you to be present for the entire class session. About half way through the class, we'll take a short 10 minute break... however, this break is by no means a "Thanos Snap" (if you haven't seen Avengers Infinity War, where on Earth have you been in the last three years!?!?), and so with the rare exception/emergency, I expect you to return. I will try my best to make the entire class engaging and enjoyable, but it takes two to tango and so I rely on you to participate and be engaged in class the whole time. If I notice that a large number of people are not returning at the break, I reserve the right to institute increasingly draconian measures (such as pop quizzes, moving classwork to the second half of the session, and even good old fashioned attendance taking). I also reserve the right to email spoilers for the latest blockbuster movies to the students who skip out on class after the break.

NORMALLY, it would be assumed that you are completing your course work at home, in the United States, with a high speed internet connection and access to

Canvas and Zoom. HOWEVER, I know that the current circumstances surrounding COVID-19 have given each of you unique challenges, and I don't want anything to keep you from succeeding in this class... a list of resources available to you is given in Appendix B of this syllabus. I also encourage you to reach out to me specifically regarding any particular challenges you may have during this course.

My Expectations (how to get an “A” in this class):

1. Attend every (or almost every) class session, and be on time, or reach out to me if you have to miss. While in class, be fully present (i.e. not on your phone/tablet). **Also, know that if you need to miss class, you are still responsible for any material that you missed that day!**
2. Put in the work, and briefly (15-20 minutes) review after each class.
3. Reach out when you need help or something is wrong; I'm happy to help!
4. Accept constructive criticism/feedback. When I took Meteorology, I didn't get a perfect score on everything... but I learned/grew from it.
5. Become less focused on the points and more focused on the POINT! Students who take an interest in the class almost always get A's.

Assignments and Grading

Participation Questions...	approx. 50 pts
In-Class Activities	approx. 50pts
Homework Assignments...	50 pts
Independent Climate Investigations (6 @ 10pts each, I drop your lowest one)...	50 pts
Quizzes (5 @ 25 points each, lowest dropped)...	100 pts
Carbon Footprint Project	100 pts
Final Exam...	100 pts
Total...	approx. 500 pts

Grading Scale:

>97% = A+, 90% = A, 88% = A-, 87% = B+, 80% = B, 78% = B-.
77% = C+, 65% = C, 55% = D, < 55% = F

Note: I reserve the right to adjust this scale, but only to benefit you.

In-Class Activities and Participation Questions: Throughout the quarter, we'll be doing numerous in-class activities that will be submitted in your composition notebook. These activities include group and individual assignments that will build on in-class discussions. These are designed to be low-risk, high-reward activities to help you go deeper in your understanding of course material. Some “lecture” will be assigned as homework to free up in-class time for more engaging activities.

Homework: There will be a homework assignment almost every week! There will either be an activity or brief video/quiz. These assignments will be assigned and completed online through the Canvas Learning Management System.

Independent Climate Investigations: Normally, we get to go outside and make direct measurements and experiments of our local weather. While our current pandemic makes such outside work difficult (if not impossible), there are still plenty of online Climate

Investigations we can do to apply what we're discussing to real-life situations. One hour a week is carved out in this class for independent work. On odd-numbered weeks (non-quiz weeks), the hour will be spent working on an independent climate investigation.

Midterm Quizzes: There will be five quizzes during the independent hour of even weeks (2, 4, 6, 8, and 10), and one comprehensive final exam. The quizzes will consist of 10 multiple choice/true-false questions, fill in the blank questions, and one or two short answer questions. I will drop your lowest midterm quiz, but will not drop the final!

Late Work/Makeup Policy:

1. Quizzes/Midterms: Any Quiz Makeups need to be arranged with me in advance, and will result in a 20% deduction (5 points for a quiz, 20 points for an exam), regardless of reasons. Otherwise, I will NOT grant any makeups!
2. Homework and Independent Weather Investigations: I will accept homework up to two days late, with a 10% per day (or part of a day) late penalty.

Returned Work: Once I return an assignment to you, it is your responsibility to hold on to it until the conclusion of the quarter in case a mistake is made with your final grade.

Important Reminders: While these policies represent the "letter of the law," I will, in many cases, be gracious within reason. As the COVID-19 pandemic has dragged on, I've had situations where requests of leniency have become more extreme, and downright unreasonable, so I want to be clear here:

1. You are responsible for all content, assignments, and deadlines, EVEN IF YOU MISS CLASS. Saying "oh, I haven't been here in the past two weeks" isn't a valid excuse (unless you have a legitimate, documented reason). If you need to miss a class session, I strongly recommend making a friend and having them fill you in on what you missed (at least in terms of assignments, etc).
2. My late policy is TWO DAYS after the deadline... any exceptions to that must be discussed with and approved by me (and only in extenuating circumstances, where it is clear that you were not able to meet the deadline for a valid reason). Emailing me in week 9 asking if you can make up an assignment from week 3 is NOT okay, and such requests will be denied... I'm not trying to be mean... just fair!
 - a. Seriously... I've had people email me in the last week or two of the course asking if I'll accept work from the first few weeks... the answer is no. I bake a lot of forgiveness (dropped assignments, extra credit) into my grading, so, to quote the Beatles, if you missed something from earlier in the course, "Let it be!"
3. Once I announce a deadline in class (or on Canvas), you are expected to write it down and keep track of it... any additional reminders are a courtesy, and should not be relied on. I'll always try to give a reminder, but I'm also human.

All of this being said, I seriously try to be gracious... I just want to make sure that I'm establishing a proper boundary, as a well trained therapist would say. If you need to miss a bunch of class, or encounter an issue, please reach out to me, and I'll work with you...

but don't wait until after things have settled down to do so... the moment you need help, let me know!

Dropping

I will drop you if:

- You miss more than 3 class sessions* (2 late arrivals or early departures count as a missed class) -or-
- You miss more than two quizzes.

Otherwise, if you choose to drop the class, you must do so on your own, **and no later than Friday, February 25th** (or be awarded a grade of FW, which is treated as an F). I need to enforce this policy, regardless of who you are (you can even be Tad, my favorite Animal Crossing villager, and I'd still have to give you an FW).

Other Policies

Disabilities: If you need any accommodation due to a disability (note taker, etc.), please don't hesitate to let me know and I'll be happy to help! All accommodations will need to be made through Disability Support Programs and Services (DSPS), which is located at RSS-141, or online at <https://www.deanza.edu/dsps/>.

Academic Integrity: I will NOT tolerate cheating or plagiarism of any kind! **This includes copying stuff off the internet!** While you're allowed (actually, encouraged) to work together on assignments, you must turn in your own paper, and in your own words! The first offense results in a grade of "0" on the assignment and a stern warning. Any subsequent offense results in a report filed with the dean's office.

Final Grade Changes: At the end of every term, almost without fail, at least one or two students approach me to ask for additional work/some leeway with their grade to earn a higher grade. While I appreciate the gravity that grades can have, I need to both be fair to the rest of the class (I don't think other students would appreciate it if I just bumped another student's grade without merit, or gave them extra work without making it available to the rest of the class) and maintain my own academic integrity (i.e. I can get in trouble for awarding grades that were not earned), so I must deny all requests for a higher grade, except in instances where I made a mistake. However, I am more than happy to help you earn a good grade if you reach out to me for help before the end of the term. There will also be plenty of extra credit during the course.

TL;DR: Engage in the class, try your best, turn in your work on time, don't cheat/copy off of others/submit identical written work, and reach out whenever you need help and I promise you that I won't let you fail this class! Everything else is just details (still read them because I will adhere to them, but the gist is above)!

Important dates/deadlines:

Deadline to Add: 1/15

Deadline to Drop with Refund: 1/16

Deadline to Drop with a W: 2/25

Holidays: 1/17 (Martin Luther King Day), 2/21 (President's Day)

Course Schedule

Week	Dates	Topics, Readings, Assignments, Deadlines
1	1/3, 1/5	Introduction to the Course, Global Warming vs. Climate Change, Scientific Method. <i>Investigation 1 – Create an Experiment</i>
2	1/10, 1/12	History of Earth’s Climate, and Climate Science, <i>Quiz #1</i>
3	1/17, 1/19	<i>No Class 1/17: Martin Luther King Day</i> Heat, Temperature, Radiation and the Greenhouse Effect <i>Investigation 2 – Greenhouse Effect – Earth vs. Venus</i>
4	1/24, 1/26	The Carbon Cycle, and how we’ve messed it up!, <i>Quiz #2</i>
5	1/31, 2/2	Natural Climate Changes, Radiative Forces <i>Investigation 3 – IPCC Radiative Forcings</i>
6	2/7, 2/19	Climate Feedback Mechanisms, Runaway Warming, and Future Projections <i>Quiz #3</i>
7	2/14, 2/16	Consequences of Climate Change – Globally and in the Bay Area, Course Project Assigned <i>Investigation 4 – Calculate your Carbon Footprint</i>
8	2/21, 2/23	<i>No Class 2/21: President’s Day</i> Energy and Carbon Footprint, <i>Quiz #4, Project Week 1</i> <i>Deadline to Drop with a “W”: 2/25</i>
9	2/28, 3/2	Transportation and Mitigation Strategies, <i>Project Week 2</i> <i>Investigation 5 – Clean Energy and Nuclear Power</i>
10	3/7, 3/9	Human Perceptions of Climate Change and Climate Policies , <i>Quiz #5</i>
11	3/14, 3/16	Course Project Presentations (5 minute videos), Review for Final <i>Investigation 6 – Project Presentations</i>
12	3/21-3/25	<i>Final Exam (Opens on 3/21 and due by 3/25).</i>

NOTE: This schedule is tentative and Subject to Change for any reason!

Appendix A: Grading Rubric

Grading Rubric: While each assignment/exam/activity is different, I always use the following guidelines when I award points (I don’t “take points off,” I award points):

The maximum number of points are awarded for work that is:

1. Clearly written and answers the question.
2. Detailed and thorough, leaving no doubt that you understand the material.

3. Submitted following directions and is on time.
4. Accurate (aka your answer is correct)

A reduction in the number of points awarded (aka “points taken off”) happens when:

1. You don’t put your name on the assignment (5 points for an exam, 1 point for all other assignments).
2. You don’t show work... ***Always show your work and provide evidence.***
3. You don’t follow directions, or you don’t answer the question.
4. You don’t explain your answer: Whenever I say “list and explain/describe,” an explanation or description is required in order to earn maximum credit.
5. You include irrelevant/incorrect information. There is such as thing as saying too much (I call this “throwing everything onto your paper and expecting credit for what sticks”). Remember that you are trying to show me what you understand.
6. Using an unverified or inappropriate source (i.e. Wikipedia, Quora, etc).
7. The work is copied from a source and not put in your own words. A quote or “blurb” is okay, but when the majority of your answer isn’t actually your work, it’s not fair to award you points for someone else’s work. When the work is copied from another student or a source without proper credit given, this also becomes an academic dishonesty issue (see my policy on academic dishonesty).
8. The submitted work is poorly written or unclear. Always proofread your work!
9. The work is submitted late, or missed due to unexcused absences.

I will share any other details regarding a specific assignment prior to attempting/submitting that assignment. Please note that whenever I grade an assignment, I approach it from an “I know nothing” standpoint, meaning that your job on every assignment in this course is to teach me the material (you know 90% of what you can teach). A lower number of points are awarded when there are holes in your explanation, major details are left out, or the information is inaccurate.

Commonly Asked Question: “Do you grade on completion, or accuracy?”

My Answer: It depends... but only on the type of assignment:

1. **Participation Questions: 100% on Completion, 0% on Accuracy**
2. **In-Class Activities: 80% on Completion, 20% on Accuracy**
3. **Climate Investigations: 80% on Completion, 20% on Accuracy**
4. **Homework, Quizzes and Final Exam: 0% on Completion, 100% on Accuracy**

Student Learning Outcome(s):

*Distinguish Science from Pseudoscience.

*Assess the tools and procedures used by climate scientists to reconstruct earth's previous climate and to predict future climate shifts.

*Explain the terms and concepts of climate science and use those terms and concepts to communicate local and global issues of climate concern