

# ATS 150: Science of Global Climate Change      Spring 2020

**CLASS MEETS:** Tuesday and Thursday from 9:30-10:45 in Wagar 232

**TEXTBOOK:** *Global Warming, Understanding the Forecast*, by David Archer.

Other readings will be distributed each week through the Canvas

**PROFESSOR:** Jeff Pierce, Atmospheric Science, [jeffrey.pierce@colostate.edu](mailto:jeffrey.pierce@colostate.edu)

Office hour: Tuesday 10:45-11:45 in room A102F of the Engineering Building.

**TEACHING ASSISTANT:** Katelyn O'Dell, Atmospheric Science,

[katelyn.odell@colostate.edu](mailto:katelyn.odell@colostate.edu)

Office hour: Thursday 10:45-11:45 in room A102F of the Engineering Building.

**CLASS WEBSITE:** CSU Canvas (<http://info.canvas.colostate.edu>)

I will distribute the notes for every lecture on Canvas ahead of time. This is where homework will be assigned. Please take a few minutes to browse through the site this week so you know what's on there and where to find things. You don't have to bring the book (ever), but I make ***printable handouts of all the notes with four slides to a page so you can make notes*** in the margins (available on Canvas).

## **GRADING:**

Your semester grade will be computed as follows:

- 1/4 Exam #1 (in class, tentatively Feb 27)
- 1/4 Exam #2 (in class tentatively Apr 7)
- 1/4 Final Exam (during Finals Week)
- 1/4 Homework (average of 3-4 assignments plus weekly readings)

## **CLASSROOM DEMONSTRATIONS AND ONLINE INTERACTIVE TOOLS:**

Occasionally, we will do labs or demonstrations to illustrate how physical climate principles work. We will also use interactive web tools to do experiments related to climate science and these may be useful for calculations in the homework.

## **WEEKLY READINGS:**

Each week, you are expected to read 3 articles on climate from the news, blogs, or journal articles, and you will turn in several sentences to Canvas describing your reading. I will generally reserve class time each week for students to discuss or ask questions about what they read that week.

## **HOMEWORKS:**

There will be 3-4 homework assignments throughout the semester.

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## SCHEDULE:

Topic	Readings
Introduction: Science, Impacts, Potential Solutions	
Earth System Overview	Chapter 1
Energy & Electromagnetic Radiation	Chapter 2
Layer Model of the Greenhouse Effect	Chapter 3
Greenhouse Gases, Lapse Rate	Chapter 4
Energy Budget of the Earth	Chapter 5
EXAM #1 (in class, tentatively 2/27)	
Weather	Chapter 6
Climate Sensitivity & Feedback	Chapter 7
Climates of the Past	Chapter 8
Fossil Fuel & Carbon Cycle	Chapter 9
Future Climate Change	Chapter 11
Climate Change Impacts	Chapter 12
Air pollution and climate	
Climate and health ( <a href="#">Brooke Anderson</a> guest lecture, 4/14)	
EXAM #2 (in class, tentatively 4/7)	
Energy	Chapter 14
Climate Change Communication ( <a href="#">Ashley Anderson</a> guest lecture, 4/23)	
Climate Change Economics ( <a href="#">Terry Iverson</a> guest lecture, 4/30)	
Climate Change Policy ( <a href="#">Michelle Betsill</a> guest lecture, 5/5)	
Wrap-up	
FINAL EXAM (TBD)	

This course will adhere to the CSU Academic Integrity Policy as found on the Student' Responsibilities page of the **CSU General Catalog** and in the **Student Conduct Code**.

At a minimum, violations will result in a grading penalty in this course and a report to the Office of Student Resolution Center.

CSU Student Honor Code, approved by ASCSU and CSU faculty and staff in 2009:

As a student at Colorado State University, I recognize my active role in building a Campus of Character. This includes my commitment to honesty, integrity, and responsibility within the campus community. As such, I will refrain from acts of academic misconduct.