

NATS 101
Introduction to
Weather and Climate
Fall 2010
Section 13: MWF 9:00 am

Dr. Christopher L. Castro
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Department of Atmospheric Sciences
University of Arizona

Teaching Assistants:
Anita Annamalai
Matthew Clarkson

My Background

- Assistant Professor, Department of Atmospheric Sciences
- Research interests: Climate variability and change, numerical modeling, land-atmosphere interactions, North American monsoon
- Ph.D. and M.S. in Atmospheric Science, Colorado State University
- B.S. in Meteorology, Penn State University

Can access my homepage via Department of Atmospheric Sciences website

Office Hours and Required Materials

- **Office hours**: MW 2:00-3:00 pm or by appointment, PAS 520
- **TA Office hours**: TBA
- **Required text**: *Meteorology Today: An Introduction to Weather, Climate, and the Environment, Eighth or Ninth ed.*, by C. Donald Ahrens
- **Required class materials**: PRS Electronic clicker device (available from UA bookstore). **Unfortunately this device may be different from what you may use in another course.**

Outline for Today

- Administrative preliminaries
- Examination schedule
- Reasons to study weather and climate
- Topical overview of the course

Attendance Policy

- Attendance mandatory and will be verified through the occasional and unannounced use of electronic devices.
- A maximum of three unexcused absences prior to the end of the semester, or I reserve the right of administrative drop.

A Word On Student Behavior..

- UA Code of Academic Integrity, Code of Conduct and Student Code of conduct enforced.
- Absolutely no disruption of a safe and respectful learning environment will be tolerated. This includes: outbursts in class, use of inappropriate or defamatory language, and physical intimidation of either the course instructor, teaching assistants, and/or students.
- A violation may result in expulsion from the course.

My Expectations of Students

- Read assigned text before the lecture
- Arrive on-time and leave when dismissed
- Hand in assignments on time through D2L. Be prepared with appropriate documentation if you have a late excuse.
- Respect the instructor and fellow students during class. Please raise your hand to ask questions during class.
- Silence cell phones and laptops. Do not use otherwise distracting electronic devices during class (iPods, blackberries, etc.).
- Feel free to let me know your suggestions as the course proceeds.

Your rights as a student

- To be treated respectfully, professionally, and courteously by your instructor and TAs.
- To have any question or concern answered with respect to the course material. *No such thing as a stupid question!*
- To see me privately during office hours for concerns about individual academic performance.
- To have assignments and exams graded fairly and promptly
- Complain to me, the TAs, or submit complaint online

Examinations

- Three closed book exams during the course of the term and final. **All exams administered in class—no take home exams.**
- Midterm exams cover topics from the date of the previous exam (10-12 lectures + review). Final is comprehensive. Approximately half of final exam consists of questions from previous three exams.
- Consist of multiple choice **and short answer**, on the order of 25-40 questions.
- **Multiple versions of exams with same multiple choice questions in different order.** Each exam will have its own numerical identifier.
- Exams may be curved depending on class performance.
- Review session will be held class before
- TAs or I reserve the right to verify your Catcard when you hand in your exam.

How not to show up for my exams



Grading: Homework Assignments

- One laboratory experiment, for which you will be provided the necessary equipment to perform.
- Biweekly question sets based on class lectures and readings.

More information on the specifics later in the semester...

Grading: Class participation

- Will occasionally use electronic devices to ask review or survey questions during class
- Course requirement to have, as will be using these to monitor attendance.
- Interwrite PRS brand clicker (available at UA bookstore)
- Participation grade based on the percentage of time a response is registered by a given student and whether answer is correct or not.

“I FORGOT MY CLICKER” = YOU’RE ABSENT!!

Grade computation

- Term exams: 45% (15% each)
- Lab and homework question sets: 30% (15% each)
- Final: 20%
- Class participation (5%)

You may miss one midterm exam, in which case the final exam is 35% of the final grade and is mandatory.

CARROTS

- If scores are 89% or greater on all term exams and essay assignments, receive at least A for the course and may opt out of final exam.
- If the final exam grade is one letter grade above the *average* of three term exams and two essay assignments, lowest score of these dropped and final exam is worth 35% of the final grade.
- **No carrots if a score of zero on any exam or homework assignment—so I don't advise missing anything!**

Grading scale

- 90% and higher: A
- 80-89.99%: B
- 65-79.99%: C
- 55-63.99%: D
- Below 55%: E

...Remember, individual exams may be curved, based on class performance.

Important Dates

Exam 1: Monday, September 20

Exam 2: Friday, October 22

Exam 3: Friday, November 19

Final exam: Friday, December 17 (8am-10am)

IF YOU KNOW YOU CAN'T BE HERE LAST DAY OF FINALS WEEK I ADVISE DROP AND/OR GET IN OTHER SECTION WITH A BETTER FINAL EXAM DATE.

- Approximately one to two weeks to submit homework question sets. Two to three weeks to submit labs. Grades typically returned within two to four weeks after the due date.
- Scores for exam 3 will be returned on the last day of class at the *end of last lecture*.

A Word and Warning on Scientific Literacy

THIS IS A NOT A “CAKE” GEN. ED. COURSE!

Atmospheric science *necessarily requires quantitative skills*, even in an introductory course

You will be expected to be familiar with concepts such as:

- Scientific notation → 6.02×10^{23} , 5.67×10^{-8}
- Units of measurement → m, kg, s, Pa...
- Mathematical representation of physical concepts →
Irradiance = σT^4 , $E = \int F dx$

If you believe that you would be uncomfortable with such concepts, I advise you to take another course.

The worst TV show on the WB network



A Word on Cheating...A persistent problem in NATS courses!!

Examples

Copying someone else's work on an assignment or exam or helping someone to copy.

Plagiarism = using someone else's words without proper acknowledgement

Using cheat sheets or other unauthorized notes.



How some students have reacted in my office after they receive an academic code violation.

How D2L (Decision 2 Learn) will be used in this course

D2L will be used for:

Submission of homework questions sets and labs.
Posting of grades

D2L will not be used for:

Any administration of course examinations as a take home, time limited exam. All examinations will be administered in class to minimize the possibility of cheating.

Course Homepage

<http://www.atmo.arizona.edu>

- Click students and courses
- Click course links
- Click NATS101- Castro

Lecture notes will be available before the day of the lecture—but may be different from those posted.

Typical class format: Lecture days

- Class announcements
- Weather discussion, laboratory demonstrations, and/or weather and climate in current events
- Possible review, survey questions
- Summary of previous lecture
- Lecture, summary, and class discussion.

Lecture typically about 30-40 minutes in length.

I will be absent some days for professional travel (TBA), in which case the TAs, other graduate students, and/or guest speakers may give lectures.

Class Listserve

I'm currently in the process of setting this up and will let you know when it is up and running...Hopefully by next week.

Email and Listserv Rules

- Must be from an “arizona.edu” account.
- Deal only with course materials of **general interest**.
- Direct personal concerns, such as academic performance, directly to me.

Appropriate etiquette:

- No advertising
- No profanity
- No inappropriate links (e.g. pornography)

**Questions on course
administrative policies?**

Why Study Weather and Climate?

**The
atmosphere
is vital to
maintaining
life on Earth**



(NASA image)

**The atmosphere
is an integral
part of the
physical world
we experience.**

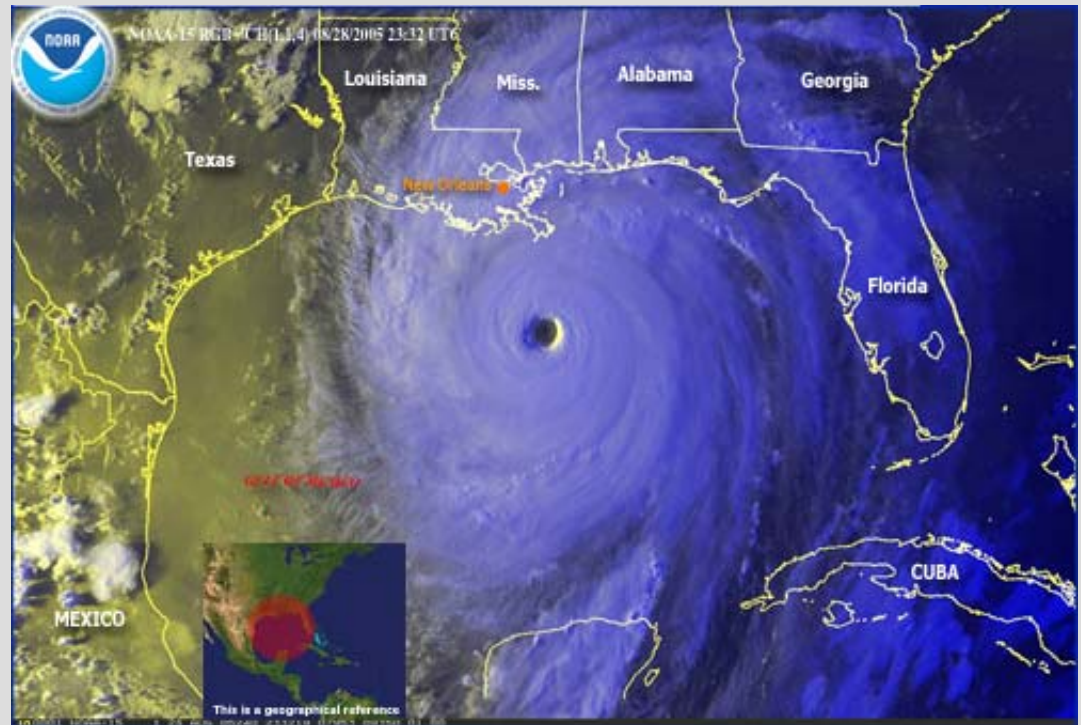
**To understand
it satisfies our
instinctive
curiosity.**



View from Kitt Peak , July 2006 (C. Castro).

Like death and taxes, weather and climate affects all of us every day in big and small ways.

...and human beings may be affecting it!



Hurricane Katrina on August 29, 2005 (NOAA imagery).



My brief comment on “Gen. Ed.” courses like this one...

I realize this is “one of those required gen. ed’s” and most of you are not going to pursue careers in atmospheric science.

My primary goal in teaching this course reflects one of the core missions of our department, college, and university:

To make ALL of you more thoughtful and enlightened citizens, regardless of what grade you may receive this semester.

Topical Overview

- Introduction to Weather and Climate
- Energy and Moisture
- Dynamics
- Severe weather
- Air pollution
- Climate variability and change

Assignment

- Read Chapter 1, Ahrens
- First assignment already posted to D2L due Sep. 3:
Enter your name, student ID, and radio ID of your clicker device. Then write one question of interest for the course.

**FAILURE TO COMPLETE THIS ASSIGNMENT RESULTS
IN AN AUTOMATIC ADMINISTRATIVE DROP!!**