

ATMO 170A1 Section 004
Introduction to Weather and Climate
Professor Mullen
Spring 2013

Class Hours and Location: 08:00PM – 09:15PM (TR) ILC 140.
09:30PM – 10:45PM (TR) ILC 140.

Instructor: Prof. Steven L. Mullen (DrM for short). PAS 552.

Teaching Assistants: Todd Hunter. PAS 526.
Timothy Lehmer. PAS 526.
Maria Cecilia Rodrigues Do Prado. PAS 526.

Email: Use [class listserve](#) for class matters. Use [email](#) for just personal issues.

Email is exclusively used for all communication with students.

I do not answer office phone calls.
I do not have a functional, university voicemail system.
I do not listen to student voicemails; they are immediately erased.
I do not return student phone calls.

You are to use the list serve for questions related to the material in class. Student use of the mullen@atmo.arizona.edu address is reserved exclusively to discuss private matters about extenuating circumstances (defined see below) that could affect your performance in the class.

Again, I exclusively use email for student communications.

Teaching Assistants:

Todd Hunter [Email Only](#), PAS 526
Timothy Lahmer [Email Only](#), PAS 526
Maria Cecilia Rodrigues do Prado [Email Only](#), PAS 526

Office Hours:

Dr. Mullen: TR 11:15 am -12:15 pm (firm)
W (usually in office after lunch for walk-ins)
By appointment on TWR
Office hours are subject to change later in the course.

Todd Hunter: TR 1:30-2:30 pm

Tim Lehmers: MWF 11:00 am-12:00 pm

Maria Cecilia Rodrigues Do Prado: MW 3:30-4:30 pm

Required Textbook:

C. Donald Ahrens (author)

Essentials of Meteorology: An Invitation to the Atmosphere, 6th Ed.

ISBN-13: 9780840049339. (Available in Bookstore? Probably costs less online.)

Recommended (Highly) Study Guide:

C. Donald Ahrens (author)

Study Guide for Ahrens' Essentials of Meteorology: An Invitation to the

Atmosphere, 6th Ed. ISBN-13: 9780840054067. (Not available in bookstore.)

The 5th ed. could work for students who are retaking Intro to Weather and Climate and already own the 5th edition but do not wish to buy another textbook, or those looking to save some big change by buying a used earlier addition. Even earlier additions might work too-I have had students who even used the 3rd edition-but the earlier the less effective. If you decide to try to use the edition earlier than the 5th edition, you are 100% on your own.

Bottom line: wherever you get the book and whatever edition you use is a personal decision. Just get the bloody textbook ASAP. There is a lot of meaty, required reading for this course, and it starts day one. The length of assigned reading averages 10-15 pages per lecture, but the number of pages per lecture is highly variable. Some lectures require just 5 pages or so, while others require up to 30!!!! Plan ahead accordingly.

Do not fall behind the assigned reading. If you do, you are likely doomed!

Course Description:

An introduction to the science of weather and climate. Topics are selected from atmospheric composition, energy balance, wind systems, genesis of fronts and cyclones, precipitation processes, clouds, severe weather, weather prediction, climate and optical phenomena. Emphasis is placed on the fundamental importance of physics, chemistry and mathematics to the atmospheric sciences. The front half of the course deals with concepts (e.g. energy, heat, force) that are needed to understand the structure and behavior of the atmosphere. The back half deals with specific meteorological phenomena. Emphasis is given to phenomena that have strong impacts on human activities and economic livelihood such as winter storms, heat waves, drought, tornadoes, hurricanes, El Niño (air-sea interactions), climate change (natural and anthropogenic), ozone depletion, and air pollution.

Grading Policy and Exam Dates:

Course grade will be computed as follows.

- 1) Examinations: 55% (5 quizzes x 11% each).
- 2) Homework assignments: 15%.
- 4) Term Project: 30%.

5) Extra credit: up to **5% extra credit** for responding to and correctly answering a baseline percentage of the in-class “clicker” questions. The amount of extra credit (or penalty) earned is no lower than

P% Right	P<40	40≤P<50	50≤P<65	65≤P<80	80≤P<90	90≤P
Bonus	-5% to 0%	1%	2%	3%	4%	5%

“No response” questions are treated as incorrect (but used for attendance purposes), so the final percentage is computed with respect to every question given during the semester. Students are issued one point for each clicker question attempted and offered an additional point for a correct answer or responding to a survey question. For example, assume there are 100 questions during the semester; so there would be a maximum of 200 possible points. Assume you attempt 90 questions and answer 82 correctly (counting survey questions). Your final point total would be 90+82= 172. Your percentage $P = 172/200 = 82\%$ since the 10 missing questions are treated as incorrect.

4) Classroom participation: I reserve the right to impose up to a **5% penalty** for lack of attendance as counted by clicker response system. Note that attendance will be taken on exam days too. An absence can be recorded for any date on which you are not present for both the first set of clicker questions and the last set of clicker questions for that day’s session.

You are allowed a maximum of 3 forgiven absences (10% of 30 total class days). Each unexcused absence above that counts for up to a 1% deduction per absence until the 5% ceiling is reached. For example

Absences	$A \leq 3$	A=4	A=5	A=6	A=7	$A \geq 8$
Penalty	0%	1%	2%	3%	4%	5%

Plus or minus 5% can make the difference between earning an A or B, B or C, etc. So attending class, responding to the clicker questions, and doing the reading prior to the lecture so you can answer the clicker questions correctly constitute an important component of the course.

The five best scores among five midterms and the final exam (6 total exams) will be used to calculate your total exam grade with the course grade assigned in accordance to the above grading policy. This means the final exam can be considered optional if you are satisfied with your course grade using only your five midterms. If you take the final, then it will replace the midterm with the lowest grade if your score on the final is higher. Each retained exam counts 10% of your course grade. **There will be no extra credit projects and exams will NOT be curved. Plan accordingly.**

Each midterm quiz will consist of approximately 25 total questions in the form of multiple choice, matching, recall or short answer questions. A few extra credit

questions/points usually appear on exams. Each exam will cover new material presented up through the end of the previous lecture period. The dates of the five in-class quizzes will be announced shortly. Unless stated otherwise, the time for exams is **the start of class (8:00 am and 9:30 am, respectively)**. **Students who arrive “late” to class on test dates will not be allowed to take the exam, where “late” is defined as arriving after the first student turns in their exam. Bring your CAT CARD on test days; the teaching team reserves the right to verify your identification.**

**Final Exam for Section 002
(8:00 am class)
Thursday May 9
8:00 am - 10:00 am
ILC 140**

**Final Exam for Section 003
(9:30 am class)
Tuesday May 7
8:00 am - 10:00 am
ILC 140**

Per University policy, there are NO exceptions on the date/time/location of the final exam. You must take the final at its designated time. Bring your CAT CARD to the final. The final will consist of approximately 50 multiple-choice questions, matching, recall and/or short answer questions. Approximately half of the questions will be taken *verbatim* from the five prior midterm exams.

A student may be granted permission to take an exam at an alternate time and/or hand-in assignments on a different due date if he/she is covered by one of the following conditions: 1) Travel owing to participation in NCAA sporting events on test days or assignment due dates. 2) Extenuating personal circumstances (e.g. *very serious* or *life-threatening* illness). Please note that the following DO NOT QUALIFY as extenuating circumstances: *“Parents already bought my plane ticket to go home” (my personal favorite); flu; common cold; uncommon cold; allergies; sniffles; alarm did not “go off”; alarm did go off but too late; alarm went off but was not heard; dead battery; flat tire; mechanical car problems; operator car problems; stolen bicycle; broken bicycle; broken computer; stolen computer; frozen computer; pet died; missing pet; missing the bus; missing the boat; morning blues; got dumped ... The list is endless.* **Appropriate and verifiable documentation is required by any student requesting to take an exam at an alternate time or hand in an assignment after the due date. Stated simply, your excuse better be good...real good...because I have heard most of the bad ones.**

COURSE GRADING SCALE

A = 90.00% or higher	(10% range)
B = 80.00 up to 90%	(10% range)
C = 65.00 up to 80%	(15% range)
D = 50.00 up to 66%	(15% range)
E = 50.00% or lower	(50% range)

Expectations:

The reading assignments for each day's lecture are listed on the course website prior to the lecture. You are expected to complete the suggested reading before the lecture. Unless you hear otherwise, you are always responsible for the reading material. You are invited to ask questions about the material during lecture, office hours or review sessions. Per University policy, I expect every student to devote *a minimum of two hours* outside of class to studying, reading, etc. for every contact hour in classroom. See [Definition of One Unit of Credit](#) or [ABOR Definition of One Unit of Credit](#).

Honors Credit:

This general education course is not available for honors credit.

Attendance Policy:

I consider attendance mandatory in the sense that it composes a significant portion of your course grade. It is taken daily, and excessive absences can adversely affect your course grade. As noted, class participation and attendance will be tallied through the use of electronic devices. After three unexcused absences, I reserve the right to issue an administrative drop (prior to the end of week 8) in accord with University policy. See [Class Attendance](#). All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion if the instructor is given reasonable notice. Absences for participation in university-sponsored activities such as NCAA sporting events will be honored if the instructor is given reasonable advance notice. Students are responsible for all material missed in class. See Grading Policy regarding missed examinations or late assignments.

Academic Integrity:

I value academic integrity. The UA Code of Academic Integrity, Code of Conduct and Student Code of Conduct are strictly followed in the course. All students are responsible for knowing the codes and abiding by them. See [Code of Academic Integrity](#). **In simple terms, cheating is not tolerated—and if I suspect cheating I will submit to the Dean of Arts, Letters and Science Office an allegation of violating the Code. I have my reputation for good reason; I earned it.** If you are an honest student who plays by the rules and cannot stand those who cut corners, you can submit complaints about classmates online at [Public Report](#). Your submission is anonymous, and I will investigate the allegations further.

Classroom Behavior:

Every student is expected to behave as a courteous adult and in manner that is consistent with enhancing the educational experience of your peer students. You are expected to not talk with your neighbors during class, to turn off any noise-producing electronic devices (e.g. cell phones, smart phones, dumb, pagers, blackberries, iPods, iPads, mp3 players, etc.), to come to class in an “unaltered state”, and to remain quiet and seated until I dismiss the class. **Disruptive or destructive behavior in the classroom, or any perceived threatening behavior toward fellow students or the teaching staff will be dealt with swiftly and accordingly** (See UA Policy [Threatening Behavior](#)).

Students with Disabilities:

If you anticipate barriers related to the format or requirements of this course, please meet with me so that we can discuss ways to ensure your full participation in the course. If you determine that special accommodations are necessary, please register with Disability Resources (621-3268; drc.arizona.edu) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations.

Literacy Requirements:

There is a science literacy requirement. This means that scientific notation is used for writing numbers (especially rather large or small ones). We specify units for all physical quantities (e.g. meters for length, seconds for time, kilograms for mass, etc.). We attempt to quantify physical relationships based on observations, everyday experiences, simple reasoning and the governing laws of physics.

There is a mandatory requirement to do an outside of class project. The project is an analysis of daily weather observations for Tucson over a three-week period. Your project grade will be based on the following criteria, in no particular order of importance.

- 1) Sound, thorough diagnosis of the weather that is based on course concepts.
- 2) Defensible reason(s) for choosing a weather event as interesting or significant.
- 3) Demonstration of accurate and timely data collection.
- 4) Organization, clarity, grammar, punctuation, and overall professionalism.

Students are to do the entire project by themselves. The project must represent your work and only your work, and not that of another student. The project will be submitted via D2L, and turnitin.com software will be run to cross check every student project for similarity with their peers and material on the internet.

Students who do not submit a project will receive an “E” for the course, regardless of their performance on the exams and other assignments.

The project will be discussed in more detail later in the course.

Some Key Dates:

January 09, 2013: **FIRST DAY OF SPRING CLASSES**

- UAccess still available for registration
- First day to file [Grade Replacement Opportunity](#)
- First day to add classes for audit; instructor signature is required.

January 10, 2013: **Begin late payment charge of \$50.00**

January 16, 2013: Last day to use UAccess for:

- adding classes, changing classes, or changing sections
- changing to or from pass/fail grade

UAccess will still be available to DROP classes through February 5th.

January 21, 2013: Martin Luther King Day No Classes

January 31, 2013: Begin \$25.00 course late drop fee.

- There will be a \$25 late drop fee assessed for **each** course dropped beginning today. For further information please click [here](#).
- Change of Schedule form with instructor approval required to ADD or CHANGE classes
- UAccess only available to DROP classes
- Registration from zero units requires Change of Schedule form with Instructor and Dean's permission

January 31, 2013:

- \$125.00 Unpaid Tuition Charge applied
- Begin \$250.00 Late Registration Charge to add class units

February 5, 2013:

Last day to:

- Use UAccess to drop
- Change from pass/fail or audit to regular grade or vice versa with just instructor approval on Change of Schedule form.
- File [Grade Replacement Opportunity](#) (GRO)

February 6, 2013

- Change of Schedule form with instructor's permission is required to drop a class. A penalty grade of W or E will be awarded and the class will appear on your transcript.
- Change of Schedule form with Instructor's and Dean's permission is required to change from pass/fail or audit to regular grade or vice versa.

March 5, 2013:

- Last day to withdraw with only instructor permission. After today, instructor and Dean's permission is required.

March 9-17, 2013: Spring Recess

See official UA calendar at [Important UA Dates and Deadlines](#) for further info.

The Golden Rule of the Course:
Mutual Respect