

SEVERE AND UNUSUAL WEATHER

METEOROLOGY 2603-001

SPRING 2007

Greetings! Over the next few months, we'll explore the violent and rare events that make the study of meteorology *really* exciting. We'll begin by learning about the physical processes that govern our atmosphere, laying the groundwork necessary for the death-and-destruction topics in the second half of the semester. Before the year is out, you will be able to locate and interpret your own sources of weather information and explain to your friends and family how tornadoes, hurricanes, thunderstorms, and blizzards form. We'll also study more docile but just as interesting phenomena that you can see right here in Oklahoma. Best of all, you'll be able to recognize a threatening weather situation and take action so you can keep yourself and others safe. Ask lots of questions and enjoy!

Instructor

Dr. Christopher Godfrey
Office: National Weather Center, Room 2602
Phone: 405-325-6228
E-mail: godfrey@ou.edu

Teaching Assistant

Heather Moser
E-mail: hmoser@ou.edu

Office Hours

Monday, Wednesday, and Friday from 9:00 a.m. to 9:30 a.m.
Sarkeys Energy Center, Room 430
Phone: 405-325-2469 (during office hours only)

I will hold formal office hours in Sarkeys Energy Center for 30 minutes prior to each class, with the expectation that I will be available for several minutes after class as well. When I'm in my office at the National Weather Center, ***my door is always open to you.*** E-mail is the best way to reach me, and phone calls are next, but if you would like to see me in person, give me a call to make sure I'm there before driving all the way to south campus. I am more than willing to meet you face-to-face by appointment as well. If you have questions about class, other coursework, or college life, please feel free to talk with me whenever the need arises.

Meeting Times

This class meets every Monday, Wednesday, and Friday from 9:30 a.m. to 10:20 a.m. Class will start and end on time. Please arrive on time. I hope that the class is interesting enough that you will also refrain from leaving early!

Readings

Required text:

Rauber, R.M., J.E. Walsh, and D.J. Charlevoix, 2005: *Severe and Hazardous Weather: An Introduction to High Impact Meteorology*. 2d ed. Kendall/Hunt, 558 pp.

Optional, yet highly recommended text:

Chapter 15: Light, Color, and Atmospheric Optics from Ahrens, D.C., 2005: *Essentials of Meteorology*, 4th ed., available from http://www.ichapters.com/coms2/summary_0298-4065_ITM_chapters for \$4.99.

Not at all necessary, but nevertheless interesting text:

Ludlum, D.M., 1991: *National Audubon Society Field Guide to North American Weather*. Knopf, 655 pp.

Class Web Page

Sign in at <http://learn.ou.edu> and select this course. Links to supplemental materials will appear on this page.

Important Dates

Monday, 26 February 2007	Exam I	In class
Wednesday, 11 April 2007	Exam II	In class
Friday, 11 May 2007	Final Exam	8:00 – 10:00 a.m.

Course Schedule

With the exception of examination dates, this course schedule is approximate and subject to modifications.

Date	Topic	Reading	Homework
17 January	No class	Chapter 1	Memorize U.S. States
19 January	Geography, Describing the atmosphere	Chapter 1	
22 January	Describing the atmosphere (States quiz)	Chapter 1	
24 January	Describing the atmosphere	Chapter 1	
26 January	Energy in the atmosphere	Chapter 1	
29 January	Guest Lecture: Dr. David Karoly	“Climate Change and Impacts on Hazardous Weather”	
31 January	Water vapor in the atmosphere	Chapter 1	#1 Assigned
2 February	Water vapor in the atmosphere	Chapter 1	
5 February	Radiation	Chapter 2	
7 February	Seasons	Chapter 1	
9 February	Observations, Radar, Satellite	Chapter 2	
12 February	Stability	Chapter 5	
14 February	Stability, Atmospheric motion	Chapters 5, 6	#1 Due
16 February	Atmospheric motion	Chapter 6	
19 February	Atmospheric motion	Chapter 6	
21 February	Cyclones and anticyclones	Chapters 3, 7	#2 Assigned
23 February	Cyclones and anticyclones	Chapters 3, 7	
26 February	Exam I		
28 February	Fronts	Chapter 8	
2 March	Fronts	Chapter 8	
5 March	Fronts	Chapter 8	
7 March	Thunderstorms	Chapter 17	#2 Due
9 March	Severe thunderstorms, Lightning	Chapters 17, 20	
12 March	Watches, warnings, and advisories	pp. 336, 435–436, 458	
14 March	Thunderstorms, Lightning	Chapters 17, 20	#3 Assigned
16 March	Thunderstorms, Lightning, Hail	Chapters 17, 19	
17–25 March	Spring Break – No Class		
26 March	Thunderstorms, Downbursts	Chapters 17, 21	
28 March	Tornadoes	Chapter 18	
30 March	Tornadoes	Chapter 18	
2 April	Tornadoes	Chapter 18	
4 April	Hurricanes	Chapter 23	#3 Due
6 April	Hurricanes	Chapter 23	
9 April	Hurricanes, El Niño	Chapter 23	
11 April	Exam II		
13 April	Floods and droughts	Chapters 24, 25	
16 April	Floods and droughts	Chapters 24, 25	
18 April	Ice storms	Chapter 11	#4 Assigned
20 April	Blizzards	Chapter 14	
23 April	Lake-effect snow	Chapter 12	
25 April	Heat bursts, Unusual weather	p. 383	
27 April	Optical phenomena	Ahrens Chapter 15	
30 April	Optical phenomena	Ahrens Chapter 15	
2 May	Optical phenomena	Ahrens Chapter 15	#4 Due
4 May	Review		
11 May	Final Exam	8:00 – 10:00 a.m.	

Evaluation

There will be two preliminary exams and a comprehensive final exam to assess your progress through the semester. The preliminary exams will take place during regular class meeting times. Four problem sets will strengthen your skills and reinforce the lecture material and will be due two weeks (or three weeks for assignment #3) after you receive the assignment. Unannounced quizzes will be given during the class period at irregular intervals throughout the semester. Though attendance is not explicitly required, these quizzes will serve as a measure of attendance and will also provide you and me with some feedback. Since life happens, I will drop the lowest two quiz grades. **There will be no opportunities for make-up quizzes or exams.** Exams must be taken on the scheduled date. If you miss the class, you miss the grade. The only exceptions to this rule are: (1) serious medical condition (illness or injury) of you or an immediate family member; (2) University excused absence; (3) jury duty; or (4) military orders. Only in such instances will an exam or another quiz be dropped or rescheduled depending on your best interests, but *only if I am notified at least 24 hours in advance*. Except under the circumstances described above, homework is due on the date listed in the syllabus and will not be graded if the assignment is not in my office when I arrive the following morning. In the event of an unforeseen circumstance that causes you to miss an exam, quiz, or homework due date, *you must notify me by phone or e-mail within 24 hours of the event*. Appropriate documentation must accompany any excused absence from an exam or quiz and should be attached to a late homework assignment.

Grading

Preliminary exams	40%	
Quizzes	10%	Lowest two grades dropped
Homework assignments	30%	
Final Exam	20%	

I will curve the final grades so that the average grade in the class is on the border between a B and a C. However, you are guaranteed *at least* the following based on your final score before applying the curve:

90.0-100	A
80.0-89.9	B
70.0-79.9	C
60.0-69.9	D
0-59.9	F

That is, if you have the lowest grade in the class and it is a 92, you will get an A. Final grades are not negotiable. If you see a problem with a quiz or exam grade, you may plead your case no later than 14 days from the date of the quiz or exam. I do make mistakes! Under no circumstances will your grade be *lower* if you see me with a question.

Academic Integrity

Since the point of this or any class is to learn, you may collaborate on homework assignments, but *you absolutely must make sure that you hand in your own work*. Copying your friend's answers will not only be obvious to me, but will result in both of you sharing the credit for that answer. Any collaboration on exams and quizzes is a more serious problem. I have zero tolerance for academic misconduct and will deal with the problem by immediately filing charges through the regular University channels.

Notes

The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations in this course are requested to speak with the professor as early in the semester as possible. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or TDD only 405/325-4173.

It is the policy of the University to excuse the absences of students that result from religious observances and to provide without penalty for the rescheduling of examinations and additional required class work that may fall on religious holidays.