



Meteorology 2023--030

Spring 2013

Class time: Lectures 9:00am-9:50am MW
Problem solving sessions: 9:00am-9:50am F

Room: 1313

Instructors: Two faculty members teaching will be lecturing on subject areas closely related to their areas of research expertise.

Lecturer for weeks 1-5: Dr. Xuguang Wang
Office : NWC 5341
Email: xuguang.wang@ou.edu
Office hours: 10:00am – 10:50am MW, or by appointment

Lecturer for weeks 6-16: Dr. David Parsons (Director of the School of Meteorology)
Office: NWC 5900
Email: dparsons@ou.edu and please cc: Marcia@ou.edu
Office hours: 10:00am – 11:50am M
10:00am – 10:50am W
or by appointment

Lead for problem solving sessions: Dr. Alan Shapiro
Office : NWC 5423
Email: ashapiro@ou.edu
Office hours: 10:00am – 10:50am MW, or by appointment

Grader: Stuart Miller
Email: stuart.miller@ou.edu

Format: The course will be taught in a unique format designed to teach students the meteorological concepts, but with problem solving sessions designed to help students make the transition from learning mathematics and meteorology to utilizing mathematics to solve meteorological problems. Thus, students should be better prepared for the sequence of meteorological courses in their junior year. The two sections will be combined for these problem-solving sessions led Dr. Alan Shapiro.

Course web page: <https://learn.ou.edu> (log on using your 4+4)

Required Text: Meteorology Today, by C. Donald Ahrens, 9th ed.

Pre-requisites: Grade of C or better in MATH 2423, PHYS 2514, METR 2013, METR 2011 (or 2014), CS 1313 (or CS 1323)

Co-requisites: MATH 2433, PHYS 2524, METR 2021

Course Grade Determination:

2 in-class exams @ 20% each (no drops)	40%
Assignments	30%
Comprehensive Final Exam	30%

Time and date of the final exam: 8am-10 am on 7 May 2013

About this course: Meteorology 2023 is the second part of the qualitative *and* quantitative introductory meteorology course for meteorology majors. We will focus on the introductory concepts of atmospheric dynamics, weather systems of different origins and scales, thunderstorms, boundary layer meteorology, air pollution, forecasting and climate change. The course is intended to prepare students for junior-level meteorology coursework. Students will use math frequently throughout the course.

Although class attendance is not formally a part of your grade for this course, you will get much more out of the course and have a much easier time with the material if you attend class. In addition, we will cover some topics in greater depth or detail in lectures than the course textbooks.

I will make every effort to post lecture presentations on the course web site. These presentations, however, will be in PowerPoint form and will tend to *outline* lessons rather than list all the specific information I present in the corresponding lectures. In other words, **you will need to take notes**. Besides that, your comprehension of the material will be more complete if you are actually in class when it is presented.

If you are having problems with the course material, I urge you to come and talk to me sooner rather than later. I can't do anything if you wait until the last week of classes to come and talk to me about problems you've been having all semester.

Important policies:

Format: Monday and Wednesday class periods will consist of lectures. The two sections of METR 2023 will be combined during Friday class periods for problem solving session. These sessions will be VERY important.

Homework: Homework will generally be assigned on Fridays at the end of the problem-solving session and will generally be due at the beginning of the next problem-solving session. Students are encouraged to submit homework assignments electronically via D2L, although hard-copy submissions will also be accepted. Homework submitted to D2L should be in PDF format; students submitting in other formats do so at their own peril. It is not the grader's responsibility to handle file compatibility issues. All submissions must be neat and legible. Hardcopy submissions must be stapled. Late homework submissions will not be accepted except in cases of immediate family

emergency, personal illness (physician's note required), religious holiday or direct participation in a University-sponsored activity.

Exams: The two in-class exams will be given during Friday class periods, in place of the problem-solving session. Material exams (and for homework problem sets) will be drawn from lectures and from the problem-solving sessions. Exams will be closed-book, with no notes allowed. Calculators will also not be allowed.

Lectures: If the lecturer for one section misses a class, both sections will be combined that day in NWC Room 1350. If classes are canceled due to weather, we will make up that class. The students will be polled to determine a meeting time that suits the majority. A lecture will be offered at that time and a videotape of the lecture made available via D2L for those who can't attend.

Reasonable Accommodation: The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodation in this course are requested to speak with me 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 325-3852 or TDD only 325-4173.

Academic Misconduct: All provisions of the Norman Campus Academic Misconduct Code shall apply in cases of academic dishonesty. Any violation of the Academic Misconduct Code will result in your removal from this course, and a grade of F will be recorded for the course. Academic misconduct is defined as "any act that improperly affects the evaluation of a student's academic performance or achievement." At the University of Oklahoma, academic integrity is expected from each student. Misconduct such as plagiarism, fabrication, and fraud, as well as attempting to commit such acts or assisting others in doing so, will not be tolerated. Students are responsible for knowing the OU Academic Conduct Code, which can be found at <http://www.ou.edu/studentcode> and <http://www.ou.edu/provost/integrity>

Classroom Etiquette:

This is a large class, and as such it is imperative that everyone make an extra effort to respect others in the class. Students pay to be here - good students are here to learn. You are adults and are expected to behave as such. Below are some basic "rules" that I expect everyone to follow while in my class:

- Come to class on time.
- Come to class with the expectation of staying in class for the entire period.
- When in class, please **turn off cell phones and pagers**, and mute the volume on your laptop computer.
- Please do NOT engage in lengthy discussions with your neighbors.
- Clean up after yourself. If you are reading a newspaper before class, please be sure to take it with you and dispose of it properly when you leave class. The same goes for any food or

drinks you bring to class – please make sure to clean up the area around you when you leave.

- Don't read newspapers or other materials not relevant to the lecture during class.
- Please be sure to bring paper and pencil (or pen) to each class.
- Please do not begin to pack your things until I have dismissed the class.

Tentative schedule (subject to change)

Date	Topics	Reading
WEEK 1 January 14 January 16 January 18	Pressure, basic laws, pressure charts, atmospheric forces	Ahrens – Ch. 2 (review), Ch. 8
WEEK 2 <i>NO CLASS January 21</i> January 23 January 25	Wind models, convergence and divergence, planetary boundary layer, turbulence	Ahrens – Ch. 8, 9
WEEK 3 January 28 January 30 February 1	Wind models, convergence and divergence, planetary boundary layer, turbulence	Ahrens – Ch. 8, 9
WEEK 4 February 4 February 6 February 8	Local winds, global circulation, ocean currents	Ahrens – Ch. 9, 10
WEEK 5 February 11 February 13 February 15	Local winds, global circulation, ocean currents	Ahrens – Ch. 9, 10
WEEK 6 February 18 February 20 February 22	El Niño – Southern Oscillation, air masses and fronts	Ahrens – Ch. 10, 11
WEEK 7 February 25 February 27 March 1	El Niño – Southern Oscillation, air masses and fronts	Ahrens – Ch. 10, 11
WEEK 8 March 4 March 6 March 8	Mid-latitude cyclones, weather forecasting	Ahrens – Ch. 12, 13
WEEK 9 March 11 March 13 March 15	Mid-latitude cyclones, weather forecasting	Ahrens – Ch. 12, 13
WEEK 10	SPRING BREAK	
WEEK 11 March 25	Thunderstorms and tornadoes	Ahrens – Ch. 14

March 27 March 29		
WEEK 12 April 1 April 3 April 5	Thunderstorms and tornadoes	Ahrens – Ch. 14
WEEK 13 April 8 April 10 April 12	Air pollution	Ahrens – Ch. 18
WEEK 14 April 15 April 17 April 19	Air pollution	Ahrens – Ch. 18
WEEK 15 April 22 April 24 April 25	Climate change	Ahrens – Ch. 16, 17
WEEK 16 April 29 May 1 May 3	Climate change	Ahrens – Ch. 16, 17