

Metr 2023-020 -- Introduction to Meteorology II – Honors Section

A quantitative introduction to winds, mid-latitude and severe storms, as well as weather forecasting, air pollution, climate and climate change. Work includes applications of theory, introduction to weather maps and forecasting, using new technology and computers for visualization.

Lecture: M W F 10:00 – 10:50 AM in NWC Rm. 5820

Instructor: Dr. Michael Richman

Office: 5646 NWC; Office Hours: MW, 11:00 - 12:00, or by appointment (make 24 hrs ahead if you need hours outside of normal office hours)

Phone: 5-1853; Email: mrichman@ou.edu

Grading:	Test 1	15%	\	lowest
	Test 2	15%	>	test score
	Test 3	15%	/	dropped
	Test 4	15%	/	
	Homework	15%		
	Comprehensive Final	30%		
	Chapter Summaries	5%		
	Participation	5%		

Books: Meteorology Today (8th ed.) by C. Donald Ahrens

Meteorology for Scientists and Engineers (2nd ed.) by Roland B. Stull

Mandatory work/Chapter Summaries: Read chapter in Ahrens book *prior to class*. Type a couple of paragraphs detailing the highlights of each chapter in your own words. Add a question at the bottom of the page, related to the chapter and place in the dropbox. This is due *prior to class* the day we start a chapter. Use Microsoft Word.

Homework: Show all work, be neat (or type it), *staple your homework* and use a spreadsheet for graphics. Here are my step-by-step expectations for solving quantitative homework problems (or test problems):

1. **Read the question more than once.** In fact, read it over until you are absolutely sure what is being asked.
2. When appropriate, **draw a picture** or pictures for what the question is asking.
3. Write down all the **known** quantities with their symbols, values, and units.
4. List the unknown variables that **you need to "find"** with their associated units.
5. **Determine which equation(s) contain the unknown variable** as a function of the known values.
6. **Solve the equations** using the known values, **carrying along the units. Show the intermediate steps.**
7. **Clearly identify your final answer** by underlining it, or drawing a box around it.
8. **Check your answer.** Are the units correct? Does it make sense?

Late Homework Policy: Subtract 50% for days 1 – 7

Participation: Participation will be judged on in-class interaction. You are responsible for asking questions when you are unsure about lecture material. If you sit quietly and never interact, how can I award participation points? Similarly, if you have many questions, save some for after class and allow others to ask questions.

This is part of the sophomore sequence on meteorology and you are professionals at the beginning of your career in meteorology. Therefore, it is my expectation that all students will act in a professional manner. There will be assigned readings from professional journals and round table discussions about the topics being discussed.

Some problems will be assigned in class as group work. Each group will select a spokesperson to show the solution on the board. That will count as participation, so rotate the spokesperson.

Grades: 4 hourly tests (*will count highest 3 scores* for a total of 45%); homework (15%), comprehensive final (30%), chapter summaries (5%) and participation (5%) = 100%. Grades will be posted on D2L.

Tentative syllabus (based on chapter numbers in Ahrens – will be using the material in Stull that match these chapter titles too)

1/16 W Introduction and Chapter 8: The Atmosphere in Motion: Air Pressure and Winds

1/18 F Chapter 8

1/21 M No class – MLK Day

1/23 W Chapter 8

1/25 F Chapter 8

1/28 M Chapter 8

1/30 W Chapter 9: Wind: Small-Scale and Local Systems

2/01 F Chapter 9

2/04 M Chapter 9

2/06 W Chapter 9

2/08 F Test 1 Review Session

2/11 M **Test 1**

2/13 W Chapter 10: Wind: Global Systems

2/15 F Chapter 10

2/18 M Chapter 10

2/20 W Chapter 10

2/22 F Chapter 11: Air Masses and Fronts

2/25 M Chapter 11

2/27 W Chapter 11

2/29 F Chapter 11

3/03 M Test 2 Review Session

3/05 W **Test 2**

3/07 F Chapter 12: Mid-Latitude Cyclones

3/10 M Chapter 12

3/12 W Chapter 12

3/14 F Chapter 12

3/17 M *****

3/19 W Spring Break

3/21 F *****

3/24 M Chapter 13: Weather Forecasting

3/26 W Chapter 13

3/28 F Test 3 Review Session

3/31 M **Test 3**

4/02 W Chapter 14: Thunderstorms and Tornadoes

4/04 F Chapter 14

4/07 M Chapter 14

4/09 W Chapter 14

4/11 F Chapter 15: Tropical Meteorology and Hurricanes

4/14 M Chapter 15

4/16 W Chapter 15

4/18 F Chapter 15

4/21 M Test 4 Review Session

4/23 W **Test 4**

4/25 F Chapters 16&17: Climate Change & Global Climate

4/28 M Chapters 16&17

4/30 W Chapter 18: Air Pollution

5/02 F Chapter 18

5/07 W **Comprehensive Final Exam (8 AM)**

- Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally, as soon as possible, so that we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities. Be prepared to bring documentation from the Office of Disability Services (325-3852).
- Any act which improperly affects the evaluation of a student's academic performance or achievement, including but not limited to the following: (a) Cheating: the use of unauthorized materials, methods, or information in any academic exercise, including improper collaboration; (b) Plagiarism: the representation of the words or ideas of another as one's own, including: (1) direct quotation without both attribution and indication that the material is being directly quoted, e.g. quotation marks; (2) paraphrase without attribution; (3) paraphrase with or without attribution where the wording of the original remains substantially intact and is represented as the author's own; (4) expression in one's own words, but without attribution, of ideas, arguments, lines of reasoning, facts, processes, or other products of the intellect where such material is learned from the work of another and is not part of the general fund of common academic knowledge; (c) Fabrication: the falsification or invention of any information or citation in an academic exercise; (d) Fraud: the falsification, forgery, or misrepresentation of academic work, including the resubmission of work performed for one class for credit in another class without the informed permission of the second instructor; or the falsification, forgery or misrepresentation of other academic records or documents, including admissions materials and transcripts; or the communication of false or misleading statements to obtain academic advantage or to avoid academic penalty; (e) Destruction, misappropriation or unauthorized possession of University property or the property of another; (f) Bribery or intimidation; (g) Assisting others in any act proscribed by this Code; or (h) Attempting to engage in such acts. Penalties are listed in the Academic Code. For further information on academic misconduct please refer to the following link: <http://www.ou.edu/provost/integrity/>