

Metr 2023-010 -- Introduction to Meteorology II

Lecture: M W F 9:00 – 9:50 AM in NWC Rm. 1350.

Instructor: Professor Michael Richman [homepage at SoM is <http://som.ou.edu/profiles.php?facID=39>]

Office: 5646 NWC; Office Hours: MW, 10:00 - 11:00, or by appointment (make 24 hrs ahead if you need to meet outside normal hrs.); Phone: 5-1853; Email: mrichman@ou.edu [email contact much preferred]

Teaching Assistant/Grader: Kristen Cassady. Office: 4th floor NSSL in NWC; Office Hours: by appointment (make 24 hrs ahead if you need to meet outside normal hrs.); Email: kristen.cassady@noaa.gov

Books: Meteorology Today (9th ed.) by C. Donald Ahrens.

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

Read chapter in Ahrens and Stull books prior to class. Bring questions to class.

Homework: Assigned a week ahead of schedule.

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 sure what is being asked. If you are not sure about the question after reading it several times, ask me.
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 if turned in by *start* of next lecture after due date.

Participation: Participation is judged on in-class interaction. I ask questions of random students. Be prepared to offer an answer. Do not stress out over getting it 100% correct. Misunderstanding and learning from that is important to the process, as is having to work hard and not always succeeding 100% of the time. Learning how to think about solving problems is a *skill* that will serve you better in life than memorizing the quadratic solutions to the gradient wind problem [though you will be taught that]. You are responsible for asking questions when you are unsure about lecture material. If you sit quietly, get frustrated and never interact, I cannot help, nor award participation points. However, if you have many questions, be professional by allowing other students a chance to ask their questions and save some of your questions for after class. We will have some student led weather briefings that count as participation. Some problems will be assigned in class as group work. In such situations, the group will select a spokesperson to show the solution on the board. Since this process will count as participation, rotate the group spokesperson.

Philosophy of life applied to class: Set goals and have motivation, discipline and perseverance. Sometimes it is difficult to be motivated to work on a good chase day. You can fool yourself into thinking the carrot and craziness jumping into a car and driving 500 miles while missing class is a temporary substitute for learning. The stick of a poor grade and, perhaps, professional dysfunction follows this. Sophomore year is a great time to develop the skills you have to learn to be successful in life: discipline, perseverance and hard work.

This class is part of the core sequence in meteorology. 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. Specifically, if you sit in class and read a newspaper, text on a cell phone, etc., that is considered unprofessional behavior. I will subtract participation points for acting in an unprofessional manner. Cheating on homework or on a test is highly unprofessional and it will result in one or more of the following: grade reduction, institutional remediation, censure, suspension or expulsion according to the academic integrity code (see handout).

Grading:	Test 1	15%	} lowest test score dropped
	Test 2	15%	
	Test 3	15%	
	Test 4	15%	
	Homework	15%	
	Comprehensive Final	30%	
	Participation	10%	



Grades: Four hourly tests (*will count highest three scores* for a total of 45%); homework (15%), comprehensive final (30%), and participation (10%) = 100%. All grades (tests, homework, final and participation) will be posted on D2L. Keep track of your grades to determine your progress. $A \geq 89.5$; $89.5 > B \geq 79.5$; $79.5 > C \geq 69.5$; $69.5 > D \geq 59.5$; $F < 59.5$

Syllabus (chapter numbers refer to Ahrens; however, we will be using the material in Stull that match most closely to the bold chapter titles)

1/18 W Introduction and Chapter 8: **The Atmosphere in Motion: Air Pressure and Winds**

1/20 F Chapter 8

1/23 M Chapter 8

1/25 W Chapter 8

1/27 F Chapter 8

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

2/01 W Chapter 9

2/03 F Chapter 9

2/06 M Chapter 9

2/08 W Test 1 Review Session

2/10 F **Test 1**

2/13 M Chapter 10: **Wind: Global Systems**

2/15 W Chapter 10

2/17 F Chapter 10

2/20 M Chapter 10

2/22 W Chapter 11: **Air Masses and Fronts**

2/24 F Chapter 11

2/27 M Chapter 11

2/29 W Chapter 11

3/02 F Test 2 Review Session

3/05 M **Test 2**

3/07 W Chapter 12: **Mid-Latitude Cyclones**

3/09 F Chapter 12

3/12 M Chapter 12

3/14 W Chapter 12

3/16 F Chapter 13: **Weather Forecasting**

3/19 M *****

3/21 W **Spring Break**

3/23 F *****

3/26 M Chapter 13

3/28 W Test 3 Review Session

3/30 F **Test 3**

4/02 M Chapter 14: **Thunderstorms and Tornadoes**

4/04 W Chapter 14

4/06 F Chapter 14

4/09 M Chapter 14

4/11 W Chapter 15: **Tropical Meteorology and Hurricanes**

4/13 F Chapter 15

4/16 M Chapter 15

4/18 W Chapter 15

4/20 F Test 4 Review Session

4/23 M **Test 4**

4/25 W Chapters 16&17: **Climate Change & Global Climate**

4/27 F Chapters 16&17

4/30 M Chapters 16&17

5/02 W Chapter 18: **Air Pollution**

5/04 F Chapter 18

5/11 F **Comprehensive Final Exam (8 – 10 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://integrity.ou.edu/>