

ATMS 103
Introduction to Meteorology
Fall 2007

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Office Hours: MW 11-12, TR 10-11 and other hours by appointment

Course Description

This course will provide you with the scientific basis for understanding the Earth's atmosphere through exercises, experiments, observations, and lectures. The first half of the course will provide you with the fundamentals necessary to understand the physical workings of the atmosphere. These include the structure of the atmosphere, energy and temperature, humidity, and the forces that give rise to winds.

Other topics will follow. We will learn about clouds, including their importance for both global temperature and precipitation formation. Then we will take a step (or 40,000) back and look at some of the larger weather systems that the earth creates, including El-Niño, monsoons, sea breezes, and trade winds. The last third of the course will be a fascinating look at some of the storms that the atmosphere creates, including thunderstorms, tornadoes, and hurricanes. Finally, we will examine what will be the biggest environmental challenge for humans over the next few centuries – global climate change. You will learn about the science of climate change and how to separate fact from fiction.

This class satisfies a natural science requirement for ILS cluster #1 (CL1), "Globalization and Environmental Issues"

Class Information

Call Number : 10533
Days and Time : M W F 12:45 – 1:35 pm
Building / Room : RBH 239 (Robinson Hall)

Textbook : Essentials of Meteorology, 5th Edition
C. Donald Ahrens, Thomson Brooks/Cole ISBN 0-495-11558-4

Website : <http://facstaff.unca.edu/chenon/classes/atms103.html>
Prerequisites : None

Grading Information

In this class, your grade will be determined by a contract that you sign during the first week of class. This puts you in control of how you are evaluated in the course.

You have the option to determine the weights that each component of your grade contributes to the total grade (within certain specified boundaries). Most components are mandatory- one is

optional. As long as your choices add up to 100% and you satisfy the minimum requirements specified, you have a valid grading contract.

Renegotiation

I understand that it may be difficult at the beginning of the semester to determine the best contract for you – it's the beginning of a new course, you don't know the material or the nature of the assignments, etc. Therefore, I will allow any of you to renegotiate your contract during week 6 of the class. This will establish a new contract for the remainder of the semester. However, there are some guidelines that must be followed for renegotiation:

- 1) You must initiate the renegotiation process. I will not specifically ask for them.
- 2) You cannot *increase* the weight of an assignment already graded. For example, if you initially designated Exam I as 5% of your grade but you received 99/100 points, you will not be able to raise the weight of Exam I to 20%.
- 3) You can *decrease* the weight of completed assignments, but by no more than 50% of the initial contract. In addition, you cannot decrease the weight below the minimum requirements set forth below. For example, if you initially designated Exam I as counting 20% toward your grade but you received a 44/100, you can decrease Exam I to 10% of your grade (but not 5% since that is more than 50% below your original weight, and not 0% since that falls below the course minimum requirement).
- 4) All revised weights must still add up to 100%.

Contract Components

The table below summarizes the “menu” that will be put together to form your contract. Here is how to interpret each of the columns:

Name of component: Titles of the various components that can be used to determine your final grade.

Possible: The maximum amount of each component that will be available throughout the semester.

Minimum Number Required: The minimum number of that component that you are required to complete.

Minimum Total % (Each): The minimum weight that you can apply toward that component.

Maximum Total % (Each): The maximum weight that you can apply toward that component.

Number you will attempt: The number of components that you will complete in the semester.

Percent of your grade: The weight that you choose to assign that component. Must be between the minimum total % and the maximum total %.

Total % of your grade: Multiply columns F and G.

The totals in column H must add up to 100%. If they do not add up to 100%, you must make adjustments in your contract choices. If you have any questions about this process, please do not hesitate to talk to me about it.

You are still encouraged to complete and turn in all of the work, even if you are not contracted to do so. Along with the obvious advantages gained of learning the material, you will also be able to drop your low(est) score(s) from the excess assignments turned in. For example, if you contracted for 8 homework assignments and turned in 10, your lowest two scores will be dropped.

Brief Summary of Contract Components

Mid-term Exams: Standard exams consisting of definitions, multiple choice, and short answer responses that test your knowledge of concepts learned and practiced in and outside of class. Mid-term exams are not cumulative – they only cover new material.

Final Exam: Similar in format to the mid-term exam but designed to test your knowledge of material learned over the entire semester. Generally longer than a mid-term exam, containing questions on new material and more general questions about “big concepts” of the course.

	A	B	C	D	E	F	G	H	
Name of Component	# Possible	Minimum Number Required	Minimum Total % (Each)	Maximum Total % (Each)	Number you will attempt	Percent of your grade (Each)	Total % of your grade (F * G)		
Mid-term Exam I	1	1	5%	20%	1				
Mid-term Exam II	1	1	5%	20%	1				
Final Exam	1	1	10%	25%	1				
In-class Work	12	8	1%	1%		1%			
Homework Exercises	8	5	2%	5%					
Weather Briefing	1	0	5%	10%					
Total (must be 100%)									

In-class Work: Generally short (30 minute) exercises that will be given out about once a week. They may be individual exercises or group work.

Homework Exercises: A take home set of problems, usually more in depth than class exercises. Generally are due about 1 week after they are given out, and will require more time to complete than in-class work.

Weather Briefing: A class presentation about the current and future weather. The presentations will be about 10 minutes and should demonstrate understanding of weather and weather processes. These will take place toward the end of the semester and will be modeled after the weather briefings that I make all semester.

Grading Scale

Your final grade will be based on the following scale:

92 – 100%	A
90 – 91.9%	A-
88 – 89.9%	B+
82 – 87.9%	B
80 – 81.9%	B-
78 – 79.9%	C+
72 – 77.9%	C
70 – 71.9%	C-
68 – 69.9%	D+
60 – 67.9%	D
< 60%	F

Make Up Policy

Homework Assignments: Assignments are due at the beginning of class on the due date. Assignments may be turned in up to 24 hours late for a 50% penalty. *Homework more than 24 hours late will not be accepted under any circumstances.* If you put homework in my mailbox, please find another faculty member to date/time stamp it. My mailbox is outside of my office in room 236 RBH.

In Class Work: You must be in class to complete the work for credit. Make ups are not possible, although you are encouraged to complete the work for practice.

Exams: Make up exams will be given only in cases of extraordinary circumstances. You must provide written documentation. I will evaluate each reason on a case by case basis. Make up exams may include an oral section.

Academic Dishonesty

If you use any form of cheating on an exam or assignment, you will be subject to procedures outlined in section 8.3 of the UNCA Faculty Handbook. Possible outcomes include receiving a zero for the exam or assignment, dismissal from the course, and/or suspension/dismissal from the university.

Class Schedule

Reading assignments for each week are given in the parentheses.

Week 1 – Aug 20-24	– Introduction, Atmospheric Structure	(1-22)
Week 2 – Aug 27-31	– Energy, Radiation Principles	(25-43)
Week 3 – Sep 3-7	– NO CLASS (Sep 3), Measurement, Seasons	(43-51,134-137,240-243)
Week 4 – Sep 10-14	– Temperature	(55-72)
Week 5 – Sep 17-21	– Humidity and Clouds	(79-89, 91-108)
Week 6 – Sep 24-28	– EXAM I (Sep 24) , NO CLASS (Sep 26,28)	None
Week 7 – Oct 1-5	– Precipitation, Air pressure and wind	(118-134, 141-144)
Week 8 – Oct 8-12	-- NO CLASS (Oct 8), Wind forces (Oct 10, 12)	(149-162)
Week 9 – Oct 15-19	– General Circulation, El Nino	(172-177, 184-200)
Week 10 – Oct 22-26	– Fronts, Air masses, Mid-latitude Cyclones	(203-205, 214-228)
Week 11 – Oct 29-2	– EXAM II (Oct 29) , Hurricanes (Oct 31, Nov 1)	(299-324)
Week 12 – Nov 5-9	– Thunderstorms and Tornadoes	(263-292)
Week 13 – Nov 12-16	– Weather Forecasting	(235-239, 243-253)
Week 14 – Nov 19-23	– Climate (Nov 19), NO CLASS (Nov 21-23)	(353-359)
Week 15 – Nov 26-30	– Climate Change	(383-411)

Final Exam: Friday, December 7, 11:30 am, RBH 239