

**ATMS 310**  
Atmospheric Kinematics and Dynamics  
Spring 2007

**Professor** : Dr. Chris Hennon  
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**Office Hours**: TR 11:00 – 12:00, W 10:00 – 12:00 and by appointment

**Course Description**

*Atmospheric Dynamics* is the study of how air moves around the atmosphere and the laws that govern its motion. Understanding dynamics is critical to understanding how weather systems develop, decay and move, and how numerical weather models create forecasts. Relying heavily on classical mechanics and understandings developed over hundreds of years, this course will provide you the necessary foundation to apply your knowledge in synoptic meteorology and forecasting.

**Class Information**

Call Number : 10624  
Days and Time : T R 9:25 am – 10:40 am  
Building / Room : RBH 239 (Robinson Hall)

Textbook : An Introduction to Dynamic Meteorology by James R. Holton  
4<sup>th</sup> Edition (2004), Elsevier Academic Press (with CD)

Optional Text : Weather Analysis by Dusan Djuric (1994). Contains a couple of sections that treat dynamics in a more straightforward manner. A good reference textbook.

Website : <http://facstaff.unca.edu/chennon/courses/atms310.htm>  
Prerequisites : ATMS 305 (Atmospheric Thermodynamics and Statics)  
Laboratory : None

**Grading Information**

Your grade in this class is based on three (3) components: exams, homework exercises, and in class exercises. Following is a brief description of each and the weight each carries towards your final grade.

EXAMS (15% Mid-terms x 2 + 20% Final = 50%)

There will be three examinations during the course. Each midterm will cover material since the previous exam. The final exam will be cumulative, meaning that material from the entire course will be included. Exam material will be based off of lecture notes, textbook reading, and homework exercises.

Exams will be graded on a standard scale.

### HOMEWORK ASSIGNMENTS (30%)

There will be approximately 10 homework assignments during the course. They will usually be more in depth than problems that would appear on an exam, but exam questions will be heavily borrowed from homework exercises. For each assignment, you are expected to:

1. *Do Your Own Work.* Assignments are to be done primarily on an individual basis. Collaboration with your classmates is allowed and encouraged, but if you find yourself copying derivations down 10 minutes before class, it will come back to haunt you.
2. *Show Your Work.* Write out (neatly) how you arrived at your answer. This will allow you to receive partial credit for incorrect answers.
3. *Circle Your Answer.* This makes it easy for me to find it.

### IN CLASS EXERCISES (20%)

For about half of all the class meeting times, we will spend the last 10-15 minutes on practice problems. There will be about 15-20 of these all together. *These exercises cannot be made up.* However, I realize there will be times where you will have to miss class. Therefore, you will be able to drop your three (3) lowest exercises at the end of the course.

### **Grading Scale**

Your final grade will be based on the following scale:

92 – 100%	A	90 – 92%	A-		
87 – 89%	B+	82 – 86%	B	80 – 82%	B-
77 – 79%	C+	72 – 76%	C	70 – 72%	C-
67 – 69%	D+	60 – 66%	D		
< 60%	F				

### **Make Up Policy**

**Homework:** No make ups. Exercises must be in my possession by the due date/time. A 50% penalty will be assessed on assignments turned in no longer than 24 hours past the due date/time. No credit will be given for assignments after than. If you know you will not be there on the due date, turn it in early.

**Exams:** Barring extraordinary circumstances, make up exams will not be allowed. If you miss an exam for what you believe to be a valid reason, you must provide written documentation in order for me to consider allowing you to make up the exam. Make up exams will include an oral portion.

### **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.

## Special Dates

These dates are FIRM!

Tuesday, February 20 : **EXAM I**  
Week of March 5 : **NO CLASS** (Spring Break)  
Tuesday, March 27 : Support ATMS Research at UR Symposium Day  
Thursday, March 29 : **EXAM II**  
Thursday, May 10 : **FINAL EXAM** (8:00 am – 10:30 am, RBH 239)