

Fall Semester 2008

Course: Geography 423/623 - Atmospheric Dynamics

Time: Tuesday and Thursday, 11:00 AM to 12:15 PM, PRS 203

Instructor: Dr. Daniel Leathers
213 Pearson Hall
831-8764 or main office at 831-2294

Office Hours: Tuesday and Friday 2:30 to 3:30 PM
(or by appointment)

Required Text: Mid-Latitude Atmospheric Dynamics: A First Course
by: Jonathon E. Martin (published by Wiley)

COURSE OUTLINE (tentative)

<u>General Topics</u>	<u>Chapters</u>
Introduction	1
Review of Mathematical Concepts	1
Fundamental and Apparent Forces	2
Atmospheric Mass, Heights, Thickness	3
Conservation of Mass, Momentum and Energy	3
EXAM #1 (25%)	
Applications of the Equations of Motion	4
Vorticity, Divergence	5
EXAM #2 (30%)	
Mid-latitude Cyclones	6,8
Quasi-Geostrophic Theory, Q-Vector	6,8
FINAL EXAM (30%)	

Exams: (85%)

There will be three 75 minute exams given during the semester (exam three will be during finals week). All exams will be comprehensive because of the nature of the material being presented. However, each will emphasize material covered most recently in lecture. The exams will include problem solving exercises, short answer questions and essay questions.

Homework Assignments: (10%)

At least four times during the semester, problems similar to those that will appear on the tests will be given as homework. These assignments must be completed by each student. These homework assignments will be worth 10% of the total class grade. The homework is given as an aid to the student to help them keep up with the material and deal with any problems before the exams.

Class Participation: (5%)

Each class period will begin with a weather discussion, examining that day's weather, and making forecasts of future weather for the Delmarva and other areas. Each student will be expected to have at least a basic knowledge of the weather situation when they come to class, and to participate in the class weather discussion. From time-to-time students may be asked to prepare a weather discussion for the next class period.

Graduate Student Projects:

To receive graduate credit for this course, graduate students must complete a semester project that involves a case study of one of several weather events that will be presented to the students. The project must include an analysis of the atmospheric dynamics responsible for the event. The exact nature of the project will be decided on an individual basis. Therefore, you should discuss your intended project with me as early in the semester as possible. These projects will be due on the last day of classes.

Grading:

Exam #1	25%
Exam #2	30%
Final Exam	30%
Homework Assignments	10%
Class Participation	5%

Graduate Student Project must be completed for Graduate credit.