AOSC432 Large-Scale Atmospheric Dynamics  
Course Outline  
Spring 2012

Instructor  
Kayo Ide  Email: ide@umd.edu  / Office: CSS3403

Credits  
3 semester hours, for only one of AOSC432 or AOSC632.

Pre- & Co-requisite  
Prerequisite: AOSC431 or METO431.  
Corequisite: MATH246.

Textbook  
□ Required: *Mid-Latitude Atmospheric Dynamics. A First Course*  
by Jonathan E. Martin, University of Wisconsin - Madison.  
□ Suggested: *Atmospheric Science: An Introductory Survey*  
by John M. Wallace and Peter V. Hobbs, University of Washington.

Schedule  
□ Weekly:  
  Class:  TuTh 9:30-10:45am  CSS 2416  
  Office Hours: TuTh 11:00-11:45am. CSS 3403  
□ Mid Term Exam:  
  In class & closed book. March 15, Th. 9:30-10:45am  
  [If found beneficial or necessary, second Mid-term in early April]  
□ Final Exam:  
  In class & closed book. May 14, M. 8:00-10:00am

Grading & Policy  
□ Grading based on: Homework (40%) + Midterm (25%) + Final (35%)  
□ Homework  
  o No late home work will be accepted without prior arrangement,  
  o Late homework may be accepted with reduced points up to 2 times:  
  o Same day by 5pm - 70%; Next day by 5pm - 30%  
  o Students may study together and discuss problems and methods of solution  
    with each other to improve understanding in a general way.  
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    with each other to improve understanding in a general way.  
  o Use of external references should be cited.

Honor Code  
Students are responsible for checking the UMD Honor code  
(http://www.shc.umd.edu/SHC/Default.aspx#)
Course Outline
Topics will roughly follow *Mid-Latitude Atmospheric Dynamics* by Martin

I. Introduction and Overview of Atmosphere in Earth System
II. Review of Basic Concepts and Techniques
III. Fundamental Elements of Atmospheric Motion
IV. Balance Relations
V. Applications of Equation of Motion
VI. Quasi-geostrophic motion: Circulation, Vorticity, and Divergence
VII. Vertical Motion in Synoptic Scale
VIII. Mid-latitude fronts
IX. Cyclones
X. Mid-Latitude Weather Systems from Potential Vorticity Perspectives
   [Time Permitting]