ATM 316: Dynamic Meteorology I
Term: Fall 2018  Class Number: 6238  Credits: 3
Mon. & Wed. 2:45 – 4:05 pm in ES B13 (Holidays: 9/3, 9/10, 9/19, 11/21)
http://www.atmos.albany.edu/facstaff/tang/classes/atm316/

Professor:
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Teaching Assistant:
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Office hours: Tuesday and Thursday 4:30 pm – 5:30 pm, or by appointment

Prerequisites:
ATM 211, PHY 150/151, MAT 214, MAT 311 (corequisite)

Text:
Mid-Latitude Atmospheric Dynamics: A First Course by Jonathan Martin (Ch. 1 – 4)

Course Requirements:
Homework Assignments (6 – 7): 30%
In-class Worksheets: 10%
Midterms (tentatively, Oct. 3 and Nov. 5): 30%
Final Exam (Dec. 13 3:30 pm – 5:30 pm): 30%

Policies:
Late assignments and makeup exams will only be allowed for university-recognized excuses*. Please contact me ahead of a due date with your excuse and documentation.

Students are expected to uphold academic integrity standards*. Violations of academic integrity will result in a zero on a graded item.

Grading:
A-E

*University-recognized excuses and academic integrity standards can be found at http://www.albany.edu/undergraduate_bulletin/regulations.html
Course Outline:

1. Vector Calculus Review: Gradient, Divergence, Curl, Integrals
2. The Total Derivative
3. Fundamental Forces in the Atmosphere
4. Rotating Frame and Apparent Forces
5. Hydrostatic Balance
6. Momentum Equations
7. Continuity Equation
8. Scale Analysis of Equations for Synoptic Flows
9. Pressure Coordinates
10. Natural Coordinates
11. Rossby Number and Balanced Flows
12. Thermal Wind

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