ATMS 310 ATMOSPHERIC KINEMATICS/DYNAMICS Spring 2009

DESCRIPTION: Topics include driving forces for the air, equations of motion, balanced flow, circulation, vorticity, streamlines, extratropical dynamics, and atmospheric waves.

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Office Hours: Monday, Wednesday 11-11:30 am; Tuesday, Thursday 12:45-1:30 pm.
(or by appointment, but walk-in is always welcome)

TEXT: **An Introduction to Dynamic Meteorology** (2004), by J. R. Holton.
ATMS 310 Supplementary Material (2009), by Alex Huang (AH).

SCHEDULE: 9:00 - 10:15 am, Monday, Wednesday, ZS 202.

EXAMS: 1st Test: 2/18; 2nd Test: 3/18; 3rd Test: 4/15;
Final Exam: **8:00-10:30 am, Friday, May 8, 2009.**

GRADING: **Assignments: 25%; 3 Tests: 45%; student presentation: 5%,**
Classroom participation: 5%; and Final exam: 20%.

GRADE SCALE (100%): A $\geq$ 93: A-: 92.5-90; B+: 89.5-87; B: 86.5-83; B-: 82.5-80;
C+: 79.5-77; C: 76.5-73; C-: 72.5-70; D+: 69.5-67; D: 66.5-60; F: $\leq$ 59.5.

SPECIAL REMARKS: Each assignment is due in a week, unless otherwise indicated. Class attendance is strongly recommended. You are solely responsible for the consequences due to your absence. No late assignments will be accepted; no make-up tests will be given. Exception may be granted for uncontrollable circumstances and medical reasons. You have to consult with the instructor at your earliest convenience for exceptions. A significant reduction of your score on your late homework may be applied. You will receive an F for the semester if you miss more than 5 class periods without any justifiable and excusable reasons.

NOTE: This syllabus is subject to any reasonable modifications by the instructor with the consent of students.

COURSE OUTLINE

Week	Dates	SUBJECT	Sections in Text	AH
1	1/14	Introduction, Math Review	1.1, 1.2	1, 2, App. H
1	**1/19**	**Martin Luther King, Jr's Birthday, NO CLASS**		
2	1/21, 1/26	Atmospheric Forces	1.4, 1.5	4
3	1/28	Hydrostatic Balance/Hypsometric Equation	1.6	3
3, 4	2/2, 2/4, 2/9	Equations of Motion	2	5
5	2/11, 2/16	Basic Equations	3.1	4
6	**2/18**	**1st Test**		
6, 7	2/23, 2/25	Balanced Flow	3.2	6
7, 8	3/2, 3/4	Thermal Wind	3.4	6
8, 9	**3/7 - 315**	**SPRING BREAK**		
9	3/16	**Student Presentations (4 minutes each)**		
10	**3/18**	**2nd Test**		
10	3/23	Streamline Analysis	3.3	7, 8
11	3/25	Vertical Motion	3.5	
11, 12	3/30, 4/1	Circulation and Vorticity	4	9
12, 13	4/6, 4/18	Synoptic-scale Motions I	6	10, 11
13	4/13	Atmospheric Oscillations	7.1, 7.2	12
14	**4/15**	**3rd Test**		
14	4/20	Atmospheric Oscillations	7.1, 7.2	12
14	4/22	Sound waves	7.3	12
15, 16	4/27, 4/29	Rossby Waves	7.7	12
16	**5/4**	**Review**		
17	**5/8**	**Final Exam, 8:00-10:30 am, Friday**		