

ATM 240 – tentative course outline

Fall Quarter – 2010

Updated: 24 September 2010

Date	Subjects	Reading: Grotjahn 1993 §(pages)	Homework
Sept. 23	Course admin, Principle balances, Deducing the general circulation	Reading: Chapt 1.1-1.3 of Grotjahn (2010)	
28	Imaginary circulations;	Reading: 1.4 of Grotjahn (2010)*	Assign #1
30	Radiation obs & simple theory Radiation slab model concepts	Reading: Chapter 2 of Grotjahn (2010)* 3.1 (39-45, 218-220) (46-57)	
Oct. 5	No class, Instructor out of town this day	Read Grotjahn (2008)	
7	T fields, application of rad/conv model	Reading: 3.2, 6.1 (52-63, 221-227, skim rest of 6.1)	#1 Due, Assign #2
12	finish T, U & Ψ fields, ang moment. cons.	Reading: 3.3 (most of), (first part of 4.1) (63-72, skim: 228-230 & 91-92)	
14	finish vel fields, P, Z, and cloud fields	Reading: 3.3 (end), 3.4, 6.2.3.2, start 3.5 (73-77, 241-244, 77-85)	#2 Due Assign #3
19	moisture fields, averaging, start momentum	Reading: end of 3.5, Appendix A, 4.1 (83, 86-89, 91-96, 388-390)	
21	maintenance against friction	Reading: 6.2.2 (233-238)	#3 Due Assign #4
26	maintaining momentum: a KE balance perspective	Reading: 4.2 (96-111, skim derivation)	
28	maintaining momentum (KE perspective) some implications	(supplements)	#4 Due Assign #5
Nov. 2	Available potential energy (intro)	Reading: 4.3.1, 4.3.2, skim 4.3.3 (111-115, skim: 116)	
4	Observed “global” APE; Limited area energetics (diabatic)	Reading: 4.5.1 Skim: 4.4 (120-121, 128-134, skim:116-119 122-127)	#5 Due Assign #6
9	APE to KE conversion, start Eddy & zonal average energetics	Reading: 4.5.2, skim: 4.5.3-4.5.5, start 4.6 (135-145)	
11	Veterans Day holiday		
16	finish Eddy & zonal average energetics, Summarize energetics	Reading: 4.6 (146-159)	#6 Due Assign #7
18	Start chapter 5, Nonzonal fields: radiation, T, V, P	Reading: 5.1, 5.2, 5.3, 6.2.3.1, 5.4 (skim: 161-181, 238-240)	
23	finish chapter 5 moisture, momentum & heat fluxes, Storm tracks, Asian Monsoon	Reading: 5.5, 5.6, 5.7, 5.8, skim: 5.10 (skim: 181-217; except skip §5.9)	#7 Due Assign #8
25	Thanksgiving Holiday		
30	meridional cells (Kuo-Eliassen Eqn)	Reading: 6.3.2, skim 6.3.1 (254-264; skim: 249-254)	
Dec 2	Eddy life cycles, reconciling jets & eddies	Reading: 7.3.2, 6.5 (349, 352-358, 269-281)	#8 Due
7	Final Exam: 1:00-3:00 Tues	“official time” for 12:40/1pm class	

* Grotjahn (2010) is the new book currently being written and revised