

UCF Physics: AST 6165 Planetary Atmospheres

Spring 2020 Schedule (10 January 2020)

Read the listed chapters BEFORE class on the day of their listing. Topical review articles are due each Thursday. Readings here are from Andrews. Additional readings from Pierrehumbert will be assigned on the homework.

Date	Day	#	Topic	Student Presentation	HW	Reading
January						
14	T	1	Introduction			
15	W	2	Global Mean Temperature			1.1 – 1.5
16	R	3	Thermodynamics in Atmospheres		1	2.1 – 2.4
21	T	4	Structure, Pot. Temp.			
22	W	5	Oscillation			2.5 – 2.10
23	R	6	Atmospheric Energy		2	
28	T	7	Moisture Basics			3.1 – 3.3
30	R	8	Moisture	Example: Pollution	3	
February						
4	T	9	Radiative Transfer Review	:		3.4 – 3.8
6	R	10	Atmospheric Spectrum Genesis	:	4	
11	T	11	Line Broadening in Atmospheres	:		
13	R	12	Spectra of Common Gasses	:	5	
18	T	13	Planetary Spectra	:		
20	R	14	Atmsopheric Properties from Data	:	6	4.1 – 4.4
25	T		Exam review			
27	R		Mid-term Exam			
March						
3	T	17	Material Derivative, Governing Eq.	:		4.5 – 4.7.1
5	R	18	Rotating Reference Frames	:	7	
7 – 15	— Spring Break					
17	T	19	Geostrophy and Cyclostrophism	:		
19	R	20	Vorticity, Modeling, Vertical Coord.	:	8	4.9 – 4.10
24	T	21	HW8	:		
26	R	22	Gradient wind, Coriolis, Vort. review	:	9	
31	T	23	Approximations	:		4.7.2 – 4.8.2, 5.3
April						
2	R	24	Gravity (Buoyancy) Waves	:	10	5.1
7	T	25	Gravity (Buoyancy) Waves	:		5.2
9	R	26	Rossby (Planetary) Waves	:	11	5.4 – 5.7
14	T	27	Thermochemical Equilibrium	:		6.1 – 6.2
16	R	28	Disequilibrium Atmospheric Chemistry	:	12	6.3 – 6.4
23	R		Final Exam, 7:00 – 9:50			