

UCF Physics: AST 6165 Planetary Atmospheres

Spring 2020 Schedule (22 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			
16	R	2	Global Mean Temperature		1	1.1 – 1.5
21	T	3	Thermodynamics in Atmospheres			2.1 – 2.4
23	R	4	Structure, Pot. Temp.		2	
28	T	5	Oscillation			2.5 – 2.10
28	T	6	Atmospheric Energy (1-2:30 PSB 248)			
30	R	7	Moisture Basics		3	3.1 – 3.3
31	F	8	Moisture (8:30-10 PSB 433)	Example: Pollution		
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	Vanessa: Magnetodyn.		
13	R	12	Spectra of Common Gasses	Ryan: Non-Jeans Escape	5	
18	T	13	Planetary Spectra	Brynn: Venus		
20	R	14	Atmospheric Retrieval	Katie: Photochemistry	6	
25	T		Exam review			
27	R		Mid-term Exam			
March						
3	T	17	Material Deriv., Gov. Eq., Rotation			4.1 – 4.7
5	R	18	Geostrophy and Cyclostrophism		7	4.8 – 4.10
7 – 15 — Spring Break						
COVID-19: Lecture 17 canceled, topics shifted down, reading & assignments same.						
17	T	19	Vorticity, Modeling, Vertical Coord.			5.1
19	R	20	Gradient wind, Coriolis, Vort. rev.	Kenny: Ion+Thermosph.	8	4.7.2 – 4.8.2, 5.3
24	T	21	Approximations	Sheila: Giant Winds		
26	R	22	Gravity (Buoyancy) Waves	Vanessa: Magnetospheres	9	5.4
31	T	23	Gravity (Buoyancy) Waves	Ryan: Giant Interiors		
April						
2	R	24	Rossby (Planetary) Waves	Brynn: Tornadoes	10	5.5 – 5.7
7	T	25	Dynamics Review	Katie: Titan		
9	R	26	Thermochemical Equilibrium	Kenny: Irradiated Winds	11	6.1 – 6.2
14	T	27	Disequilibrium Atmos. Chemistry	Sheila: Hurricanes		6.3 – 6.4
16	R	28	Exam Review	:	12	
23	R		Final Exam, 7:00 – 9:50			