ASTR/GEOL/ATOC 5810: Planetary Atmospheres

Very Approximate Class and Reading Schedule

Week	Date	Topic	Readings
1	8/28	Basics, what are atmospheres? where do they come from?	Ch. 1 + 2 (1-25)
2	9/4	Hydrostatic equilibrium, vertical structure, convective stability.	Ch. 3 (26-33)
3	9/11	Intensity, flux, thermal Emission, global energy balance.	Ch. 3 (33-40)
4	9/18	Radiative transfer through absorbing atmospheres, radiative-convective equilibrium.	Ch. 3 (41-54)
5	9/25	Spectroscopy, atomic and molecular line formation, remote sensing.	Ch. 3 (33-54)
6	10/2	Habitable zones, the Sun as a star.	Ch. 2 (20-25), Ch. 4 (74-91)
7	10/9	Condensation, Clausius-Clapeyron equation, thin atmospheres.	Ch. 5 (92-103) Ch. 6 (128-135)
8	10/16	Seasons, variability timescales.	Ch. 5 (92-110)
9	10/23	Radiative transfer through scattering atmospheres.	Ch. 5 (106-110), Ch. 6 (111-128)
10	10/30	Composition, chemistry, clouds.	Ch. 7 (136-150)
11	11/6	Dynamics on slowly rotating planets, energy transport.	Ch. 3 (54-73), Ch. 7 (150-161)
12	11/13	Dynamics on rapidly rotating planets, geostrophic balance.	Ch. 8 (162-201)
13	11/20	Fall Break	
14	11/27	Atmospheric evolution, atmospheres in cosmic context.	Ch. 9 (202-222), Ch. 10 (223-239)
15	12/4	Climate change on Earth	Ch. 11 (240-246)
16	12/11	Talks on Semester Projects	

(This will very likely change a bit throughout the semester.)