

ASTR 792 Fall 2020 Class Schedule

		Topics	Readings	Due
W 1		Physics Fundamentals I		
8/25	T	Collisions	Draine 2.1-2.2.1, 2.4-2.6	
8/27	R	Statistical Mechanics	Draine 3.1-3.4	
W2		Physics Fundamentals II		
9/1	T	Atoms and Ions	Draine ch 4, 6.7 (T&S 5)	
9/3	R	LECTURE CANCELLED		
W3		Physics Fundamentals III		
9/8	T	Collisional Excitation & Boltzmann Equation	Draine 6.1, 17.1-17.4	
9/10	R	Radiative Transfer	Draine 7.1-7.4	
W4		Ionized gas I		
9/15	T	Check in & Class Discussion		
9/17	R	Absorption Lines and Line Profiles	Draine 9.1-9.4, 9.8, 9.10, 6.2-6.6	PS 1
W5		Ionized Gas II		
9/22	T	Radiation Fields & Thermal Plasma	Draine 10.1-10.2, 10.5-10.7, 12	
9/24	R	Ionization and Recombination	Draine 13.1, 13.4-13.5, 14.1-14.3	
W6		Ionized Gas III		
9/29	T	HII Regions	Draine ch 15.1-15.3, 15.5	
10/1	R	Nebular Diagnostics	Draine 18.1-18.3, 18.5, 18.7	
W7		MIDTERM BREAK		
10/6	T	NO CLASS		
10/8	R	NO CLASS		

W8		Heating & Cooling		
10/13	T	Heating & Cooling of HII Regions	Draine 27.1, 27.3-27.5,	PS 2
10/15	R	HI Heating and Cooling	Draine ch 8, 30	
W9		Dust		
10/20	T	Dust Properties, Heating & Cooling	Draine ch 23.1, 24	Draine 27.1a
10/22	R	Interactions between Dust and Gas	Draine ch 25.7, 26.1-26.2	
W10		Molecular Gas I		
10/27	T	Diatomic & Linear Polyatomic Molecules	Draine 5.1, 31.3-31.6 (T&S ch 1,2)	Draine 8.3
10/29	R	H ₂	9.9, 31.1-31.2	
W11		Molecular Gas II		
11/3	T	Symmetric & Asymmetric Top Molecules	Draine 5.2 (T&S ch 3,4)	Draine 5.1a & c
11/5	R	LECTURE CANCELLED		
W12		Molecular Gas III		
11/10	T	The ammonia molecule: NH ₃	Draine 5.2.1 (T&S ch 12)	Draine 5.3abc
11/12	R	Radiative Trapping	Draine ch 19.1-19.3, 19.5	
W13		Kinematics and Chemistry		
11/17	T	Astrochemistry	Draine ch 14.6-14.7, 33	Draine 19.1
11/19	R	Fluid Dynamics	Draine ch 35	
W14		Summary		
11/24	T	Shocks & The Three-Phase ISM	Draine 36.1-36.3, 39	Draine 33.1abc
11/26	R	NO CLASS		
W15		STUDY WEEK		

W16		FINALS		
12/10	R	Compilation of in-class problems due		