

PHYSICAL METEOROLOGY**11:670:431****Dr. Miller****ENR 233**

1	1/22	Tues		Cloud Microphysics	Nucleation of Water Vapor
2	1/25	Fri		<i>Chapter 6</i>	Microphysics of Warm Clouds
3	1/29	Tues			
4	2/1	Fri	HW #1		Cloud Liquid Water and Entrainment
5	2/5	Tues			
6	2/8	Fri	HW #2		Growth of Cloud Droplets
7	2/12	Tues	Quiz		Microphysics of Cold Clouds
8	2/15	Fri			
9	2/19	Tues	HW #3		Artificial Modification of Clouds
10	2/22	Fri		Atmospheric Radiation	Description of Radiation
11	2/26	Tues	Exam #1	<i>Chapter 4</i>	
12	3/1	Fri			Blackbody Radiation
13	3/5	Tues	HW#4		Scattering, Absorption
14	3/8	Fri			Radiation Transfer
15	3/12	Tues	Quiz		
16	3/15	Fri	HW #5		Visibility
	SPRING BREAK				
17	3/26	Tues			Meteorological Optics
18	3/29	Fri	HW #6		
19	4/2	Tues			Emission and Schwarzschild's Equation
20	4/5	Fri			Heating Rates and Global Radiation Balance
21	4/9	Tues	Exam #2	Atmospheric Boundary Layer	
22	4/12	Fri		<i>Chapter 9</i>	Turbulence
23	4/16	Tues	HW #7	<i>Ghate</i>	
24	4/19	Fri		<i>Ghate</i>	The Surface Energy Budget
25	4/23	Tues	Quiz		
26	4/26	Fri			Vertical Structure of Boundary Layer
27	4/30	Tues			Evolution of Boundary Layer
28	5/3	Fri			

3 Quizzes 15%

7 Homeworks 25%

2 Midterm Examinations 40%

Final Examination 20%

Policies

Late Homework Penalty: 25% per day and 100% after day 2

Late Quiz Penalty: no make-up quizzes

Office Hours: Wednesday BY APPOINTMENT

Text: Wallace and Hobbs: Atmospheric Science: An Introductory Survey

Learning Goals:

- (1) Exhibit critical thinking when confronting new information
- (2) Apply the mathematical and physical foundations of Meteorology and Climatology to solve problems using analytical and computational methods
- (3) Exhibit a working knowledge of cloud droplet and ice crystal formation
- (4) Understand the physics leading to the formation of precipitation
- (5) Exhibit a working knowledge of the transfer of shortwave and longwave radiation in the atmosphere
- (6) Be able to explain the basic physics of light scattering by small particles
- (7) Demonstrate the ability to explain the reasons for the spectrum of colors observed in the sky
- (8) Be able to identify observable optical phenomena and explain the underlying physics
- (9) Exhibit a basic understanding of boundary layer structure and turbulence