

**Outline**  
**METEO 3, Sections 14 & 15**  
**Fall 2004**

John Clark  
513 Walker  
Office Hours: MWF 4-5 PM  
e-mail: clark@ems.psu.edu

**Course purpose:**

- to provide an elementary knowledge of the principles governing the atmospheric circulation
- to apply these principles to real atmospheric problems
- to allow you to appreciate the impacts of weather and climate on human activities and vice versa

**Reference:** A World of Weather, (Third Edition) Nese & Greci by Kendall/Hall Publishers

**Notes:** A set of images taken from the computerized notes used in class is available from Gnomon Copy Center, 130 W. College Avenue for about \$9.

**ACADEMIC HONESTY**

Dishonesty includes cheating on an exam, misrepresenting the work of others as your own. It may result in failure of the course or a particular exam. For complete information about the University's policy on Academic Honesty, consult the Policies and Rules section of the Student Guide to the University, 2000/2001.

**Class Schedule**

<b>Lecture</b>	<b>Date</b>	<b>Topic</b>	<b>Pages</b>
<b>INTRODUCTION</b>			
1	Sep 1	Generation of motion	
2	Sep 8	Atmospheric composition	
<b>ENERGETICS &amp; STRUCTURE</b>			
3	Sep 13	Solar & terrestrial radiation	35-50
4	Sep 15	Energy balance	35-50
5	Sep 20	Global warming	497-506
6	Sep 22	Temperature structure & air masses	69-79
<b>WINDS, TEMPERATURE &amp; PRESSURE</b>			
7	Sep 27	Pressure, pressure gradient force	93-108
8	Sep 29	Hydrostatics	93-108
9	Oct 4	Coriolis force	101-103
10	Oct 6	Geostrophic balance & const. pressure surfaces	127-135
11	Oct 11	Thermal Wind	127-135
12	Oct 13	Winds near the ground & friction	103-108

## **CLOUD PROCESSES**

13	Oct 18	Adiabatic processes	179-187
14	Oct 20	Atmospheric stability & convection	179-187
15	Oct 25	<b>Mid-Term Exam</b>	
16	Oct 27	Clouds & precipitation	179-187

## **MID-LATITUDE STORMS**

17	Nov 1	Mid-Latitude Storm Structures	293-299,317-329
18	Nov 3	General Circulation	239-249

## **TROPICAL WEATHER**

19	Nov 8	Monsoons & Hurricanes	265-276
----	-------	-----------------------	---------

## **CLIMATE & CLIMATE CHANGE**

20	Nov 10	Circulation of Oceans	71-72
21	Nov 15	El Nino	245-249
22	Nov 17	Theories of Climate Change 1	497-516
23	Nov 22	Theories of Climate change 2	497-516

## **Thanksgiving Break**

## **CONVECTIVE STORMS**

24	Nov 29	Thunderstorms	363-372
25	Dec 1	Supercells&Tornadoes	387-401
26	Dec 6	Fronts&Squall Lines	366-372
27	Dec 8	Meso-Scale Convective Complexes	213-216

**Final examination:** TBA after October 4

## **Final Grade**

- 1) One mid-term will be given. It will account for 20% of the final grade. **Makeups will not be given except in the case of bona fide illness**
- 2) Six quizzes will be given at unannounced times. The best four will be used to make up 20% of the final grade. The quizzes will be two questions based on recent material from class. They will be given during the last 10 minutes of the class period.
- 3) The final exam accounts for 26 2/3% of the final grade.
- 4) The laboratory will account for 33 1/3% of the grade.

Grades will be assigned after the class average is set at B.