

Syllabus for ATMS 173 – Understanding the Atmosphere – Spring 2009

Lecture schedule

Date	Topic	Reading*
W 14 Jan 2009	Introduction	
M 19 Jan	holiday	no classes
W 21 Jan	The Earth's Atmosphere	Chapter 1
M 26 Jan	The Earth's Atmosphere	
W 28 Jan	Warming the Earth and Atmosphere	Chapter 2
M 2 Feb	Warming the Earth and Atmosphere	
W 4 Feb	Air Temperature	Chapter 3
M 9 Feb	Air Temperature	
W 11 Feb	Air Temperature & Review	
M 16 Feb	Exam I	Chapters 1 - 3
W 18 Feb	Humidity, Condensation, and Clouds	Chapter 4
M 23 Feb	Humidity, Condensation, and Clouds	
W 25 Feb	Cloud Development and Precipitation	Chapter 5
M 2 Mar	Cloud Development and Precipitation	
W 4 Mar	Air Pressure and Winds	Chapter 6
M 16 Mar	Air Pressure and Winds	
W 18 Mar	Air Pressure and Winds	
M 23 Mar	Air Pressure and Winds & Review	
W 25 Mar	Exam II	Chapters 4 - 6
M 30 Mar	Atmospheric Circulations	Chapter 7
W 1 Apr	Atmospheric Circulations	
M 6 Apr	Air Masses, Fronts, and Middle-Latitude Cyclones	Chapter 8
W 8 Apr	Air Masses, Fronts, and Middle-Latitude Cyclones	
M 13 Apr	Air Masses, Fronts, and Middle-Latitude Cyclones	
W 15 Apr	Thunderstorms and Tornadoes	
M 20 Apr	Exam III	Chapters 7 and 8
W 22 Apr	Thunderstorms and Tornadoes	Chapter 10
M 27 Apr	Thunderstorms and Tornadoes	
W 29 Apr	Hurricanes	
M 4 May	Hurricanes	Chapter 11

*assignment shall be completed *before* class meets on this date

Syllabus for ATMS 171 – Understanding the Atmosphere – Spring 2009

Laboratory schedule

Date	Topic	Assignment*
M 19 Jan 2009	holiday	no classes
M 26 Jan	Introduction	
M 2 Feb	Lab#1 – The Sun	
M 9 Feb	“	
M 16 Feb	Lab#2 – Air Temperature	Lab#1 write-up due
M 23 Feb	“	
M 2 Mar	Lab#3 – Humidity	Lab#2 write-up due
M 16 Mar	“	
M 23 Mar	Lab#4 – Precipitation	Lab#3 write-up due
M 30 Mar	“	
M 6 Apr	Lab#5 – Air Pressure	Lab#4 write-up due
M 13 Apr	“	
M 20 Apr	Lab#6 - Wind	Lab#5 write-up due
M 27 Apr	“	
M 4 May	Laboratory exam	26 Jan – 27 Apr material Lab#6 write-up due

*assignment shall be completed *before* class meets on this date

Description

A laboratory course designed for the major and non-major student who is interested in learning the basics of the structure of our atmosphere and how the structure changes over time. The goal of this particular section is to have all students want to become meteorology majors by the end of the semester. Yep, meteorology is that cool!!

Outline

The Earth's Atmosphere (text, Chapter 1)
Warming the Earth and Atmosphere (text, Chapter 2)
Air Temperature (text, Chapter 3)
Humidity, Condensation, and Clouds (text, Chapter 4)
Cloud Development and Precipitation (text, Chapter 5)
Air Pressure and Winds (text, Chapter 6)
Atmospheric Circulations (text, Chapter 7)
Air Masses, Fronts, and Middle-Latitude Cyclones (text, Chapter 8)
Thunderstorms and Tornadoes (text, Chapter 10)
Hurricanes (text, Chapter 11)
Global Climate (text, Chapter 13) *{time permitting}*

Grading

Weather Analysis and Forecast	5%
Quizzes	10%
Exam I	15%
Exam II	15%
Exam III	15%
Final Exam	15%
Laboratory Reports	15%
Laboratory Exam	10%
Total	100%

92% < total score ≤ 100%	A
90% < total score ≤ 92%	A-
88% < total score ≤ 90%	B+
82% < total score ≤ 88%	B
80% < total score ≤ 82%	B-
78% < total score ≤ 80%	C+
72% < total score ≤ 78%	C
70% < total score ≤ 72%	C-
68% < total score ≤ 70%	D+
60% < total score ≤ 68%	D
total score ≤ 60%	F

Weather Analysis and Forecast

During each lecture, a student team (pair) will be required to give weather discussion/forecasts as well as an evaluation of the previous weather discussion/forecast. On Monday, one team member (designated AV) will discuss the “Current Weather” and “Today’s National Forecast” maps posted at <http://www.hpc.ncep.noaa.gov/> and verify the forecast given at the previous lecture. The other team member (designated FC) will discuss the forecast looking at the “48-HR FCST of FRONTS/PRESSURE AND WEATHER (valid 1200Z Wednesday)” and the “24-HR DAY 2 QPF (valid 0000Z WED through 0000Z THU)” maps posted at the same web site. The Wednesday lecture FC person will be looking at the “HPC Day 5 SFC PROG (valid 1200Z MON)” and the “HPC 48-HR PCPN DAY 5 QPF (valid 1200Z SAT through 1200Z MON)” maps.

The instructor will assign the day when each student will be responsible for being the AV or FC team member. If a student is unable to give the weather brief on the day assigned, inform the instructor and he will trade the assigned date with another student in the class. Failure to give a weather brief on the assigned day or failure to make an attempt to trade the assigned weather brief date with another will result in loss of *all* the Weather Analysis and Forecast percentage points (5% of the Final Course Grade).

Quizzes

Quizzes will be given unannounced once a chapter throughout the semester to encourage course participation and attendance. The quizzes will be defined either as individual or group quizzes. When a quiz is designated for a *group*, each individual within the group will receive an identical grade.

Exam I, II, and III

The mid-term exams (I, II, and III) will be primarily testing new material introduced since the previous exam or since the start of the semester.

Final Exam

The final exam is a *comprehensive* exam in which all the material contained in the entire course is testable.

Laboratory Reports

Several laboratory exercises will be undertaken that have a threefold educational purpose; [1] to learn details of the atmosphere that work together to form our weather, [2] to gain an appreciation of the difficulty in making accurate measurements of these details, and [3] to learn how scientists communicate their findings with colleagues via the written word. The latter goal will be met when results of the laboratory exercises are documented in laboratory reports.

Laboratory Exam

An examination will be given during the final laboratory period that will test the understanding of the details of the atmosphere addressed in the laboratory exercises.

Assignment/Quiz/Exam Policy

Assignments are to be handed in before the start of the laboratory session on the date they are due. Assignments handed in *after* the start of the lab session are considered late until 4:30 pm on the date they are due and will have an automatic 10% deduction from their final score. Assignments handed in after 4:30 pm on the date they are due will receive no credit.

Quizzes and Exams are written tests and will be taken on the date they are scheduled, unless circumstances (e.g. medical or loss in the family) warrant. Make-up quizzes and exams for special circumstances will consist of an individual oral graded question and answer session at a mutually agreed upon time outside of the usual class meeting time.

The lowest quiz score for each individual will be *dropped* from the total quiz score tabulation.

Instructor

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Textbook

“Essentials of Meteorology An Invitation to the Atmosphere” by C. Donald Ahrens (fifth edition; “up, up, and away in my beautiful balloon...”)

Disabilities

Contact Prof. Miller early in the course if you have a disability that requires special accommodations.

Academic Integrity

Cheating or plagiarism results in a failed assignment, quiz, or exam on the first infraction. A second infraction results in course failure and a report to the UNCA administration. See <http://www.unca.edu/catalog/academicregs.html> under “Student Responsibilities” for a refresher on the UNCA policy.