

Syllabus - Fall 2008

ATMO 105: Introductory Meteorology **Monday, Wednesday, 12:30-1:45 pm** **Room 427, Summerfield Hall**

Instructor: Richard McNulty, Ph.D.
Office: Lindley Hall, Room 413C
Office Hours: Mon/Wed/Fri, 9:00-9:50 am
Tues/Thurs, 11:00-11:50 am
or by appointment
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Textbook: Understanding Weather and Climate, 4th ed (with CD),
authors: Edward Aguado & James E Burt, Pearson/Prentice Hall

Reading Assignments: Listed below are the chapters in the textbook that will be covered in this course and the reading assignments for each chapter (page numbers in parentheses). You are responsible for the material in the reading assignment even though it may not be explicitly covered in class.

Chapter 1: Composition & Structure of the Atmosphere

- A. Weather Map Basics (21-23,407-415)
- B. Composition of the Atmosphere (5-14)
- C. Vertical Structure of the Atmosphere (14-20)
- D. Temperature Scales (1-3 Physical Principles) (15)

Chapter 2: Solar Radiation & the Seasons

- A. Energy/Energy Transfer (31-34)
- B. Radiation (34-39,42)
- C. Seasons (43-50)

Chapter 3: Energy Balance & Temperature

- A. Solar Radiation (55-61)
- B. Terrestrial Energy (61-70)
- C. Temperature, Part I (70-78)
- D. Temperature, Part II (78-87)

Chapter 4: Atmospheric Pressure & Wind

- A. Concept of Pressure (93-97)
- B. Pressure Concept (98-104) [incl: 4-3 Physical Principles]
- C. Forces Causing Wind (105-108)
- D. Geostrophic/Gradient Wind(108-114)

Test 1 - Covers Chapters 1 thru 4

Chapter 5: Atmospheric Moisture

- A. Water Vapor in the Atmosphere (123-133, 141)
[incl: 5-3 Physical Principles]
- B. Saturation (133-138)
- C. Lifting Humid Air (142-146)
- D. Humidity Left-Overs (138-142,146-152)

Chapter 6: Cloud Development & Forms

- A. Lifting Mechanisms (157-160)
- B. Stability (160-168)
[incl: 6-1 Forecasting]
- C. Clouds (169-183)

Chapter 7: Precipitation Processes

- A. Cloud Growth Processes (189-195)
- B. Forms of Precipitation (195-202)
- C. Measuring Precipitation (202-207)

Test 2 - covers Chapters 5 thru 7

Chapter 8: Atmospheric Circulations & Pressure Patterns

- A. Three-Cell Model (213-216)
- B. Atmospheric Flow Patterns (216-226)
- C. The Oceans (226-230)
- D. Wind Systems (230-238)
- E. El Nino, La Nina (238-249)

Chapter 9: Air Masses & Fronts

- A. Air Masses (255-259,264)
- B. Fronts (264-272)

Chapter 10: Mid-Latitude Cyclones

- A. Mid-Latitude Cyclones (279-284)
- B. Three-Dimensional Processes (284-292)
- C. Mid-Latitude Cyclone Example (292-298)
- D. Large-Scale Weather Patterns (298-302)

Test 3 - Covers Chapters 8 thru 10

Chapter 11: Lightning, Thunder, and Tornadoes

- A. Lightning (307-314)
- B. Thunderstorms Structure (314-316,322-323)
- C. Thunderstorms Initiation (317,Lab 24)
- D. Mesoscale Convective Systems (316-321,326)
- E. Tornadoes (330-335)
- F. More Tornadoes (335-347)
- G. Doppler Radar (324-325) (11-4 Forecasting)

Chapter 12: Tropical Storms & Hurricanes

- A. Tropical Cyclones (353-359)
- B. Formation & Development (360-367)
- C. Tropical Cyclone Dangers (370-375,379)

Chapter 13: Weather Forecasting & Analysis

- A. Weather Forecasting (389-400)
- B. Procedures & Products (400-407)

Test 4 - Covers Chapters 11 thru 13

Chapter 14: Human Effects: Air Pollution & Heat Islands

- A. Air Pollutants (429-437)
- B. Atmospheric Impacts (437-440)
- C. Urban Heat Islands (440-445)

Chapter 15: Earth's Climate

- A. What is Climate? (453-456)
- B. Tropical Climates (456-461)
- C. Dry Climates (461-464)
- D. Mild Mid-Latitude Climates (464-467)
- E. Cold Climates (467-471)

Sidebars: Sidebars are sections of the textbook that discuss specific topics in more depth than the main text. These sections are titled: Focus on the Environment; Physical Principles; Specific Interest; and Forecasting. Unless specifically included in the reading assignment above, these sections will not be included in the course.

Course grades: ATMO 105 combines the grades from the lecture portion and the laboratory portion of the course to determine the final course grade. The lecture portion is weighted 70% and the laboratory portion is weighted 30%. *You must receive a passing grade in both lab and lecture to pass the course.*

The grade for the lecture portion of the course will be determined as follows:

Four tests @ 100 pts each	400
Final exam	100
Ten Blackboard quizzes @ 10 pts each	100
<i>Total possible lecture points</i>	<i>600</i>

Letter grades will not be given for individual exams and quizzes. Only points will be awarded. A final percentage will be calculated separately for the lecture portion and for the lab

portion of the course, and then a weighted combination will be calculated as noted above. The final letter grade for the course will be based on the final weighted average.

Standard percentages will be used to assign the final letter grade. Scores may be adjusted according to class performance by an amount not greater than the equivalent of one letter grade.

Missed Exams: Students who fail to attend their first lab session will be dropped from the course. During the term, if you miss a lab or exam, you must present a written excuse to your instructor. Your instructor will then determine if you will be allowed to make up the lab or exam.

Cell Phones: Please turn off or silence your cell phone and refrain from using the cell phone text message feature while class is in session.

Electronic Devices: No electronic devices will be allowed during examinations. This includes, but is not limited to, cell phones, cell phone calculators, PDAs, Blackberries, and any devices with earphones or earbuds (i.e., requiring in-ear placement). "Old fashion" calculators may be used, if needed.

Expectations:

I expect to:

- Guide your study of the atmosphere.
- Present course material in a clear and concise manner and at a rate that allows you to take meaningful notes.
- Measure how well you learned the material.
- Answer questions to the best of my ability.
- Treat your fairly.

I expect you to:

- Arrive at class on time, ready to listen, and stay until class is over.
- Do not disturb other people in the classroom.
- Clean up after yourself, i.e., don't leave your trash in the classroom.
- Prepare for class by reading the assigned material.
- Bring a copy of the Powerpoint slides to class and use them to take additional notes.
- Participate in class activities such as keyword identification.
- Ask appropriate questions about course material.
- Take responsibility for completing course requirements.

Handicapped Students: The staff of Services for Students With Disabilities (SSD), 135 Strong, 785-864-2620 (v/tty), coordinates accommodations and services for KU courses. If you have a disability for which you may request accommodation in KU classes and have not contacted them, please do so as soon as possible. Please also see me privately in regard to this course.

Intellectual Property: Course materials prepared by the instructor, together with the content of all lectures and review sessions presented by the instructor are the property of the instructor. Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited. On request, the instructor will usually grant permission for students to audio tape lectures, on the condition that these audio tapes are only used as a study aid by the individual making the recording. Unless explicit permission is obtained from the instructor, recordings of lectures and review sessions may not be modified and must not be transferred or transmitted to any other person, whether or not that individual is enrolled in the course.

Cheating: Cheating in any manner will not be tolerated. Note that cheating includes handing in for credit work that is not your own. Any student discovered cheating will be given an F for the course and a letter explaining that the grade was given for academic misconduct will be sent to the student's school or college.