

## **METR 1014-011 Introduction to Weather and Climate Laboratory (Sp. 2009)**

Time of class: 1:30-3:20 PM Mondays, SEC Rm. P209

Instructor: Chad Shafer Email: [cmshafer@ou.edu](mailto:cmshafer@ou.edu)

Office Hours: 3:30-4:30 PM Mondays, SEC Rm. 562; by appointment otherwise NWC Rm. 5632. Not available on Tuesdays, Thursdays, and Friday afternoons.

***Philosophy of the course:*** This laboratory is intended to provide students a “hands-on” approach to learning and applying meteorological theories and concepts. By the end of this course, students should be well-acquainted with the following topics: North American geography; the importance of solar radiation on Earth’s weather and climate; radiation and energy transfer; diurnal/seasonal cycles and their causes/effects; the importance of water/atmospheric moisture; the analysis and interpretation of atmospheric soundings, surface maps, and upper-air maps; the identification and implications of air masses and fronts; and thunderstorm/hurricane environments, structure, and evolution.

### ***Required materials for class:***

Crawford, K. C., K. A. Kloesel, R. A. McPherson, A. D. Melvin, and D. A. Morris, 2006: *Explorations in Meteorology: A Lab Manual*. ISBN: 0-495-01029-4.

Ahrens, C. D., 2008: *Essentials of Meteorology: An Invitation to the Atmosphere*. (5<sup>th</sup> edition) ISBN: 0-495-11558-4.

Pen and/or pencil and paper

Colored pencils (a set of 12 should be adequate)

Scientific calculator

### ***Lab Assignments:***

Each week of class will feature a lab exercise as featured in the lab manual. The schedule of lab assignments is as follows:

Week 1 (Jan. 26):	Lab 1 (North American Geography)
Week 2 (Feb. 2):	Lab 2 (The Earth-Atmosphere System)
Week 3 (Feb. 9):	Lab 3 (Radiation and Energy Transfer)
Week 4 (Feb. 16):	Lab 4 (Daily Temperature Cycle)
Week 5 (Feb. 23):	Lab 5 (Atmospheric Moisture)
Week 6 (Mar. 2):	Lab 8 (Radiosondes and Soundings)
Week 7 (Mar. 9):	Lab 9 (Soundings and Stability)
Week 8 (Mar. 16):	Spring Break (No Lab)
Week 9 (Mar. 23):	Lab 14 (Weather Forecasting: Precipitation Type)
Week 10 (Mar. 30):	Lab 6 (Air Masses and Fronts)
Week 11 (Apr. 6):	Lab 7 (Surface Map Analysis)
Week 12 (Apr. 13):	Lab 10 (Upper-Air Analysis)
Week 13 (Apr. 20):	Lab 13 (Hurricane Tracks and Forecasts)
Week 14 (Apr. 27):	Lab 11 (Thunderstorms and Their Environment)

Week 15 (May 4) is the last week of classes. There will be an optional review session, and all grades for the lab course will be distributed during this session. *There are no exams in this lab course.*

**Policies/Grading:** Depending on the difficulty and the size of the weekly lab, there will be approximately thirty minutes to an hour of lecture, followed by the remaining time for which the labs can be completed. **Unless otherwise specified, lab assignments must be completed in class!** It is likely that there will be a couple of instances in which the lab assignments cannot be finished during class time. These assignments can be completed as homework due at the announced completion time. However, these instances will be rare. In other words, there will be little to no homework in this lab course.

Because lab assignments must be completed in class, **attendance is mandatory.** If no acceptable excuse is given for a class absence, the lab assignment for that week will be graded as a zero. Acceptable excuses include at least two business day's notice for medical appointments, weddings, or conferences (i.e., I must be notified by the Thursday before the next class). Emergency absences (including unexpected health problems, funerals, car accidents, etc.) are obviously acceptable but must be verified. **If an absence is deemed acceptable and can be made up by attending a separate lab section, you must obtain permission from me and the other lab section's instructor.** Other means of make-up labs will be determined on a case-by-case basis.

If I cannot read your work or if plagiarism or other forms of cheating are involved in the completion of lab assignments, you will receive no credit for the relevant problems/assignments. See the Academic Misconduct Policy below.

Each lab assignment is worth an equivalent portion of your final grade. Lab exercises are worth 90% of the total grade in this lab course, and a "participation" grade is worth the remaining 10%. **The lowest lab score will be eliminated from the final grade.** The "participation" grade is based on completion of a weather journal, which will be discussed in Week 2 of class. (This should be a very easy 10% of your grade.) The final class grade is worth 20% of the overall grade in METR 1014-010. **All scores from lab assignments will be returned the following week of class. You will also be notified of your current class grade every week.**

**Reasonable Accommodation Policy:** "Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities." See <http://drc.ou.edu/content/view/16/> for more details.

**Academic Misconduct Policy:** "Each student should acquaint him or her self with the University's codes, policies, and procedures involving academic misconduct, grievances, sexual and ethnic harassment, and discrimination based on physical handicap." See <http://www.ou.edu/provost/pronew/content/integritymenu.html> for more details. The entire OU Academic Code can be found at <http://www.ou.edu/studentcode/OUStudentCode.pdf>