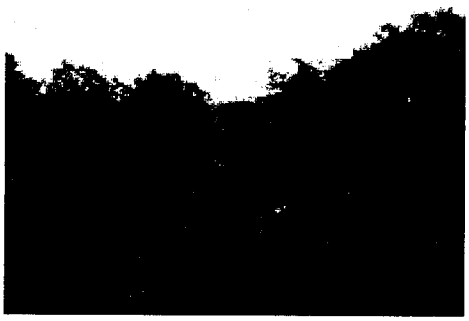
METR 3613: Meteorological Measurements



Fall 2006: Syllabus*

Time and Location:

Lectures:	M, W 11:00 - 11:50 AM, NWC 1350
Help Sessions	F 11:00 - 11:50 AM, NWC 1350 or NWC 5302
Labs:	Section 011: T 9:30 - 11:30 AM, NWC 5302 Section 012: W 1:00 - 3:00 PM, NWC 5302

Instructors: **Dr. Petra Klein** (pkklein@ou.edu)
NWC 5339, Phone 325-1631
Office hours: M/W 1:15 – 2:15pm or by appointment

Teaching Assistants: **Gabriel Garfield** (okweatherman@hotmail.com)
NWC 5340:
Office hours: T 11:30am-12:30pm and
R 1.30pm-2.30pm, or by appointment

Required Textbook: ***METEOROLOGICAL MEASUREMENT SYSTEMS,*** by Fred V. Brook and Scott J. Richardson, Oxford University Press, 2001

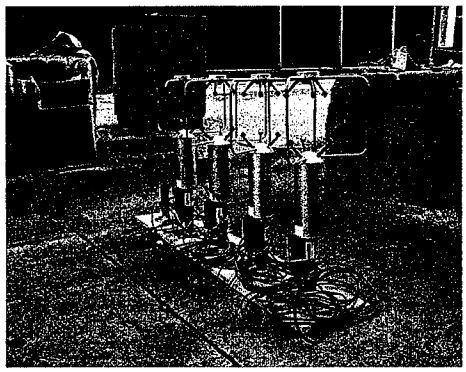
Additional material:
Most of the course material, such as lecture notes, lab instructions and project descriptions, will be posted on Desire2Learn. **Make yourself familiar with Desire2Learn and check it frequently for new material and announcements.** It is required that you download the lab instructions and read them before you come to the labs. **You are also required to purchase lab books for taking notes during laboratory classes and to document your project studies.**

Grading and Exams:

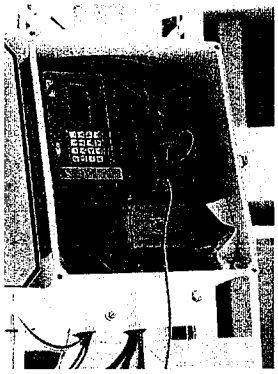
Labs (5), in total:	25%
Long-term Project	25%
Two In-Class Exams (October, November, each 25%):	50%
Final Comprehensive Exam (December):	25%

The lowest score of the 3 exams can be dropped. The lab grades and project grade cannot be dropped

Purpose of this Course



No matter what area of meteorology is of special interest to you, measurements of the atmospheric parameters will undoubtedly influence your work. In any area of science, it is our observations of nature that lead to new theories and new understanding. In meteorology, we cannot hope to make a successful weather prediction unless we have sufficient knowledge of the current state of the atmosphere. The maps we use give us a representation of this state. The models we use ingest this initial state and churn out a predicted state for the future. Thus, knowledge of the techniques used to obtain these measurements, the possible flaws in the data collected, and the manipulations performed on the data before they are used are essential to any meteorologist, whether a forecaster or a researcher. This course is designed to provide you with this knowledge.



Objective

This course is designed for meteorology majors. The main objective is to provide you with an understanding of the concepts used in performing careful meteorological measurements and of the equipment used for these measurements. We will discuss the limitations of the instruments and identify major causes of errors in measurement output. Furthermore, we will teach to you basic procedures of data analysis and interpretation, and you will learn to work effectively in a team.

Methods

To facilitate the learning process, this course will use a variety of settings. We will have a mix of **standard classroom lectures, hands-on labs, and a long-term, hands-on project with field trips**. Additionally help session on different topics will be offered on select Fridays (see attached schedule). Participation in these Help Sessions is recommended but not required. In the lectures, reading will be assigned and you will be expected to read it **before** class (unannounced quizzes on the reading can be expected). Additionally, it is strongly recommended to independently review the text book chapters related to the topics covered in class even if no specific reading assignment has been given.

In order to perform the laboratory experiments successfully and in a timely manner, **it is absolutely necessary that you read the lab description before coming to the lab classes. You need to download the description from Desire2Learn and bring a printed copy to the lab classes. If you fail to do so the lab instructor has the right to exclude you from the labs.** Formal lab reports must be submitted 2 weeks after completion of the experiments (see attached schedule for deadlines). An outline and instructions for the lab reports

will be handed out and discussed at the beginning of the course and it is very important that you closely follow the instructions.

The long-term projects will provide you additional hands-on experience in working with meteorological instruments, and you will also learn to record and analyze meteorological data. In the design of the projects, we also put emphasize on demonstrating you the sensitivity of meteorological data towards instrument and exposure errors. For a successful completion of the projects we expect you to perform independent experiments near your housing complex, and/or to participate in extensive studies at field sites near/on the NWC and Lake Thunderbird during the dates specified in the attached schedule. In the case of bad weather, we reserve the right to re-schedule the field trips on a short notice. Depending on which project you choose, your studies will involve mainly daily measurements of meteorological parameters or shorter intensive measurement campaigns, and for certain projects you will also work with previously collected data. We will present further details on the different types of projects during the first week of class. Please choose then your project according to your main interest and the schedule that fits best your plans in Fall 2006.

Lab and projects reports: All semester long, you will work on your lab and project assignments in a team of 4-5 students (same team for both the labs and projects). The teams will be formed at the beginning of the semester and we expect them to remain unchanged until the end of the semester. It is in your own best interest that you cooperate well with your team members and effectively work together during the lab experiments. We also strongly encourage team work during the project studies, and in the analysis and discussion of your results. **However, we expect that each student prepares an independent write-up and submits its own laboratory and project report.** Any form of copying text from reports of other students, the laboratory and project descriptions posted on the web, or any other material publicly available without making references will be treated as academic misconduct, and actions will be taken according to the academic misconduct code further described below.

Web Sites

You can find the main web site for this class on the Desire2Learn system: https://learn.ou.edu/index.asp. All necessary course materials (lab descriptions, assignments, grades, etc.) and important announcements (e.g., directions to the field-trip sites) will be posted on this site. Please become familiar with this site and check it frequently.

Attendance and Make-up Policy

In this class, participation will be strongly encouraged. Note that some material will be available only during class, and unannounced quizzes will be given. For both of these reasons, we expect 100% attendance to be the norm. **Laboratory exercises and project related field trips absolutely require your attendance and cannot be made up without PRIOR permission which will be granted on a case-by-case basis.**

IF YOU MISS A LAB, YOU MAY NOT USE SOMEONE ELSE'S DATA!! Any attempt to do so without permission by the instructors will be treated as academic misconduct, and actions will be taken according to the academic misconduct code described further below.

Only under extraordinary circumstances make-ups will be given if an exam is missed. **You MUST notify the instructor BEFORE the exams. Sickness will be accepted as an excuse only if accompanied by a note from a physician.**

Other Important Policies

Reasonable Accommodation: The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations in this course are requested to speak with the professor as early in the semester as possible. **Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course.** The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or TDD only 405/325-4173.

Academic Misconduct: All provisions of the Norman Campus Academic Misconduct Code shall apply in cases of academic dishonesty. Academic misconduct is defined as "any act that improperly affects the evaluation of a student's academic performance or achievement." All faculty at the University of Oklahoma expect academic integrity from each student. Misconduct such as plagiarism, fabrication, and fraud, as well as attempting to commit such acts or assisting others in so doing, will not be tolerated. Students are responsible for knowing the academic misconduct code, which is included in the student code (http://www.ou.edu/studentcode/67259_ou_student_a.pdf).
All instances of alleged academic misconduct will be thoroughly investigated and action will be taken according to the rights and responsibilities under the academic misconduct code described at http://www.ou.edu/provost/integrity-rights/.

Important Dates

1st Hourly In-Class Exam:	**Wednesday, September 27, 2006**
2nd Hourly In-Class Exam:	**Wednesday, November 08, 2006**
Final Exam:	**Wednesday, December 13, 2006**

For more information on other deadlines see also the attached detailed schedule.

Tentative Schedule and list of course topics:

** The instructors reserve the rights to alter any or all stated policies and dates if they feel it is in the best interests of students in this class. Any changes to the proposed syllabus will be announced in class.*