

# Meteorology 445: Undergraduate Meteorology Laboratory

## INSTRUCTOR

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## CLASS MATERIALS

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- *Lab Manual.* Please read the lab manual before class! The manuals were *very hard* to re-write so that they are clear, factually correct, and (hopefully) interesting.
- *Angel Class Website.* Everything you need for this class is available on the Angel website, including the syllabus, class schedule, lab manuals, and when appropriate, grading guides.

## CLASS STRUCTURE

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There are a lot of changes to the class structure for this semester, and all of them are good. The faculty is planning to combine 445 and 446 into a 1-semester, 3-credit "W" course beginning Fall '06. To facilitate this transition, we have pared down the experiments from 445 and 446 to the best 8 labs, and these labs will become the basis of the new class. *Consequently, we will only be doing 4 labs in 445 this semester!* We also have a lot of new equipment, which should make the experiments run much more smoothly.

- We will do 4 experiments this semester. You are required to write a formal lab report for all of them.
- You may work with a partner to complete both the experiment and the report for each lab. I'll leave it up to you to decide how you want to divide the report-writing with your partner, just make sure everyone does an equal amount of work.
- Before each experiment, *please read the lab manual.* Please do not show up for class with no idea about the experimental procedure. At the very least, read the Introduction and the Experimental sections of the manual so you will be able to follow my pre-lab instructions.
- *You and your lab partner both must complete all 4 experiments in order to pass Meteo 445.* It is not sufficient for one partner to complete the experiment – both of you must do it. If you have to miss class for any reason, PLEASE TELL ME IN ADVANCE via e-mail or phone. Don't make me track you down! In the event that you miss class, make arrangements with me to complete the experiment as soon as possible.

- In order to cut down on the workload that all of us have outside class time, *we will be working on the lab reports during class periods*. You will do the experiment one week, and the next week you will work on the report during class time. For example, week 3 we will do our first experiment, *Measuring Temperature using an IR Thermometer*. You and your partner will complete the experiment in class, and I recommend working on the analysis during that time as well.

You will write a *rough draft* of your report during the week after you've completed the experiment. This rough draft is due at the beginning of class 1 week after you've completed the experiment. The rough draft is worth *5 points* of your total lab report grade; I will check to see that you've completed it at the beginning of class. Note that you need to have made a good faith effort on the rough draft in order to receive credit for it.

During class time, I'll be available to answer your questions about the report – most likely, many people will have the same basic questions, and we can address them as a group. Hopefully you can transform your rough draft into a final report during class time, but if you don't finish, you shouldn't have too much work left to do outside of class. The final report is due 2 weeks after you've completed the experiment. We will follow this procedure for all 4 experiments.

- Except for very special circumstances, I *will not* be available outside of class time to help you with your report. You need to ask me all your questions about the report during class time.

## **GRADING**

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We don't have a grader this semester – I will be grading your reports out of 100 points as follows:

- **Rough Draft:** 5 points
- **Abstract:** 10 points
- **Introduction:** 10 points
- **Experimental Methods:** 10 points
- **Results:** 20 points
- **Discussion:** 35 points
- **Conclusion:** 10 points

Please read the section on Formal Lab Reports in order to review the required structure and content of the reports.

In addition, you will complete an in-class exercise about experimental errors and significant figures that I will grade out of 50 points

## **ACADEMIC HONESTY**

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Unless otherwise stated, you should complete the experiments with your lab partner(s) only - you may not work with other students, and you certainly may not fabricate data. If you need to use another group's data for any reason, you must acknowledge it in the Results section of your report. You must also write your own lab reports with your partner(s); do not copy another group's work. You will not receive credit for either lab or written work that is not your own.

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