General Meteorology

Meteorology 301 – Spring 2017

Class meetings: MTWF, 9 am, 2026 Agronomy Hall

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Course Goals

- To understand the fundamental physical and mathematical principles of meteorology
- To begin developing self-learning skills needed for life-long professional development

Course Design

The provided course outline is tentative, but should be adequate enough to give you a reference for the order of topics and a reasonable idea of the course's pace. Students are expected to come to class prepared to participate actively in the learning process. As in any professional organization, absences should be justified and promptness is standard procedure. Your homework should be done with pride and submitted on time. Late homework will ***not*** be accepted.

Texts

Required: *Atmospheric Science: An Introductory Survey*, Wallace and Hobbs, 2nd ed., Elsevier Inc., ISBN-13: 978-0-12-732951-2.

Required: Top Hat subscription code (5-year, 1-year, and one-semester codes are available).

Email

I communicate frequently with the class by email. The default email address I have for all students is their @iastate.edu address. Students who prefer to use some other email address should follow one of these two alternatives (the first is preferred):

1. Follow the instructions to automatically forward your iastate.edu email to another system.
2. Send to me by email your preferred address.

Choice 1 is preferable because faculty teaching other courses will also use email to communicate with you. They will also have your iastate.edu address, through AccessPlus, but not likely your other email address. Setting up automatic forwarding saves you from having to repeat these steps down the road.

Structure of Classes

Many classes will involve traditional lectures. However, some will be much more interactive. I will not give a lecture, but rather work on Class Review Problem Sets. These problems sets can be found under the problem set link on the course webpage. You will be expected to learn the material from the textbook and work on these problems before class. In these cases, I will spend short periods working with each group on the assigned problems.

NOTE: If we do not finish a derivation during class, students will be responsible for completing it on their own. (Nearly all derivations are in the textbook.)

Procedure for Standard Problem Sets

Please follow these procedures for doing problem sets:

1. Label the problem.
2. Work the problem and include comments.
3. Identify the solution (e.g. underline, put in a box, use an arrow pointer...)
4. Make sure your name is on each sheet of paper.

- Occasionally, students may be randomly picked to explain problem solutions to the class.
- Homework is to be neatly stapled with no jagged edges. Do not bother handing in homework that is dog-eared and/or has rough edges.

Problem sets are due at the beginning of class roughly one week after they are assigned (unless stated otherwise).

Procedure for Class Review Problem Sets

These will be problems that I want you to work in groups in advance of classes where the material is covered. There are two motivations for these sets:

- To give us opportunity to work problems together in class.
- To give further incentive for self-learning, both on your own and in collaboration with your problem set group.

NOTE! Class Review problem set results will be handed in at the end of the next class after the one in which they are covered.

Inquiry Based Lab

This semester you will have the opportunity to create and participate in a class research project. The project will be modeled after an authentic research project with the goal of helping you understand how scientists perform research and to address several common misconceptions associated with doing scientific research.

As a part of a small group of students, you will be asked to develop a hypothesis or a scientific question using scientific data available online or your own data obtained using instrumentation available to the class. The lab will take place over the course of the semester with roughly one day a week typically devoted to the lab.

More information on the inquiry based lab will be provided during the first week of class.

Grading

- 3 Exams (25% each): 75%
- Problem Sets/In Class Assignments: 15%
- Inquiry Based Lab: 10%

The course grade is determined by how each student performs. This is done in part by assessing how students do with respect to each other and how the class as a whole has done. This gives a starting point for reviewing what each student has demonstrated with regard to his/her grasp of the material. The total score from tests, labs, etc. is NOT judged on a scale of below 60 = F, 60 - 69 = D, etc.

Academic Misconduct

Academic Misconduct in any form is in violation of Iowa State University Student Disciplinary Regulations and will not be tolerated. This includes, but is not limited to: copying or sharing answers on tests or assignments, plagiarism, and having someone else do your academic work. Depending on the act, a student could receive an F grade on the test/assignment, F grade for the course, and could be suspended or expelled from the University. See the Conduct Code at www.dso.iastate.edu/ja/academic/misconduct .html for more details and a full explanation of the Academic Misconduct policies.

Students with Disabilities

Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. All students requesting accommodations are required to meet with staff in Student Disability Resources (SDR) to

establish eligibility. A Student Academic Accommodation Request (SAAR) form will be provided to eligible students. The provision of reasonable accommodations in this course will be arranged after timely delivery of the SAAR form to the instructor. Students are encouraged to deliver completed SAAR forms as early in the semester as possible. SDR, a unit in the Dean of Students Office, is located in room 1076, Student Services Building or online at www.dso.iastate.edu/dr/. Contact SDR by e-mail at disabilityresources@iastate.edu or by phone at 515-294-7220 for additional information.

Miscellaneous

- Please make sure your cell phones and any other noise makers are turned off before coming to class.
- Texting in class is rude and disrespectful. Let's not go there.
- I believe laptops are a distraction. Please do not use them during class. If you want to use them to take notes, please contact me beforehand.
- Please check the class website for important dates regarding the class schedule. These are days we might not have class due to instructor absence.

Test 3 for Spring 2017 will be during the final exam period. The tentative time of this exam is Tuesday, May 2, 7:30am - 9:30am. The exam will be held in our regular classroom (2026 Agronomy Hall).