

ATMO 489-502
Special Topics in Weather Forecasting

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Office hours: Monday 10:00-11:30, anytime I'm around, or by appointment

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Prerequisite: ATMO 251
Credits/contact: (1-4) Credit 3.

Course Schedule:

Lecture Friday 1:50-2:40 O&M Room 1210

Laboratory Monday&Wednesday, 1:50-3:50 O&M Room 1201

Required Textbook: Weather Forecasting Handbook, by Tim Vasquez

Friday In-class Quizzes: 15% of grade, based on textbook, consisting of four questions (at least two drawn from "review questions" at end of chapters)

Jan. 20: Chapter 1 – Fundamentals
Jan. 27: Chapter 12 – Numerical Guidance
Feb. 3: Chapter 10 – Winter Forecasting
Feb. 10: Chapter 2 -- Observation
Feb. 17: Chapter 3, section 1 – Chart Analysis
Feb. 24: Chapter 3, sections 2-6 – Other Tools
Mar. 3: Chapter 4 – Physics
Mar. 10: Chapter 5 – Fronts and Jets
Mar. 24: Chapter 6, sections 1-6 – Motion, part 1
Mar. 31: Chapter 6, sections 7-10 – Motion, part 2
Apr. 7: Chapters 7 and 8 – Barotropic and Baroclinic Systems
Apr. 14: No classes
Apr. 21: Chapter 9 – Convective Weather
Apr. 28: Chapter 11 – Tropical Weather
May 2: Redefined Friday: Class, but no quiz

Learning Modules: 30% of grade. UCAR/COMET Meteorology Education and Training (METED) learning modules may be accessed from http://meted.ucar.edu/resource_modlist.php. A list of acceptable modules, with their descriptions, will be available on the ATMO 489 course website.

During the course of the semester, each student will write six forecast exercise papers (2 pages plus figures) demonstrating proficiency with the modules by applying each of them to a particular real-time forecast problem, and six verification papers (1 page plus figures) assessing the accuracy of that forecast and diagnosing any errors.

The modules and exercise papers may be done in any order, except that it of course makes sense to read a module prior to applying it. The exercise papers must be submitted via email in Word, RTF, plaintext, or HTML format prior to the forecast event actually taking place, and the

corresponding verification paper must be completed and submitted no more than 48 hours after the forecast verifies.

You can choose any module to be the focus of the forecast and verification; it would be wise to monitor the weather situation and pick modules that are particularly appropriate. Not waiting until the due date lets you pick especially interesting situations. If you have preferred modules, keep an eye on the weather situation for a good time to make a forecast. The first exercise paper must be submitted by February 6, with successive deadlines every two weeks.

Laboratory Notebooks and Presentations: 40% of grade. Each student will keep a laboratory notebook consisting of forecasting notes, forecasts, analyses, and other in-class lab assignments. The notebook will be turned in for evaluation at the end of each two-week lab segment. Use your notebook as an opportunity to show off your knowledge and reasoning ability.

Laboratory Outline:

Jan. 18: Web resource development

Jan. 23-Feb. 1: Ensemble Prediction

Feb. 6-Feb. 15: Snow Forecasting

Feb. 20-Mar. 1: Potential Vorticity

Mar. 6-Mar. 22: Full Frontal Anatomy

Mar. 27-Apr. 5: Minimum Temperatures

Apr. 10-Apr. 19: Model of Choice

Apr. 24-May 1: Applied Forecasting

Final Project: 15% of grade. Each student will conduct a final project, consisting of a forecast of value to a private company, and present to the class the background, the forecast, the verification, and its value. The private company will be of the student's own choosing.

Final Grade: All grades in the course will be letter grades; grades will be averaged in the proportions given above to determine the final grade for the course.

Aggie Code of Honor: An Aggie does not lie, cheat, or steal, or tolerate those who do. Incidents of academic dishonesty, including plagiarism, will be dealt with according to established procedures. See <http://www.tamu.edu/aggiehonor/> for more information.

Absences will be handled in accordance with Student Rules (<http://student-rules.tamu.edu/rule7.htm>).

The materials used in this course are copyrighted. These materials include but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy the handouts, unless permission is expressly granted.

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in Room B118 of Cain Hall, or call 845-1637.