

SYLLABUS: SYNOPTIC METEOROLOGY LABORATORY (METR 4424)

CLASS TIME: M T W Th 02:00-3:45pm

CLASS ROOM: NWC 5600

INSTRUCTOR: Dr. Kevin Kloesel, Assistant Dean, College of Atmospheric and Geographic Sciences

OFFICE: NWC Suite 4602

OFFICE HOURS: TBD

PHONE: 325-3298

EMAIL: longhorn@ou.edu

TEACHING ASSISTANTS:

James Miller milljam@ou.edu

Jeremy Gibbs gibbz@ou.edu

COURSE WEB SITE: Accessible via <http://learn.ou.edu> (log in with 4+4)

REQUIRED TEXT: The AMS Journal entitled Weather and Forecasting

REQUIRED READING LIST: To be assigned

COURSE GRADE DETERMINATION:

Laboratory Work/Homework	30%
2 In-Class Exams at 15% each (no drops)	30%
Term Project/Oral Presentations (details later)	20%
Final Exam (Tue Dec 12 th , 2:00-3:30)	20%

ENROLLMENT: Prerequisite: Grade of C or better in METR3123, METR3223

COURSE GOAL: The purpose of this lecture/laboratory course is to gain an understanding of the observed behavior of the atmosphere through the application of basic theoretical principles. Concepts will be developed for studying atmospheric circulations, particularly extra-tropical cyclones and anticyclones. Laboratory work will include the development of diagnostic techniques suitable for a better understanding of the current weather and will use modern technological tools. Students will be expected to explain theoretical concepts in an oral and written format. They also will be expected to demonstrate mastery in understanding various physical processes that impact weather analysis and forecasting, surface and upper air analysis, fronts and wave cyclones, satellite meteorology, sounding analysis, thermodynamic diagram, cross sections, forecasting, NCEP models, MOS, radar meteorology, and severe spring and winter weather.

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 me 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. ANY violation of the Academic Misconduct Code will result in your removal from this course, and a grade of F will be recorded for the course. Academic misconduct is defined as "any act that improperly affects the evaluation of a student's academic performance or achievement." At the University of Oklahoma, academic integrity is expected 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 OU Academic Code, which can be found at <http://www.ou.edu/studentcode> and www.ou.edu/provost/integrity.

METR 4424 MOTIVATION:

"The principal task of any meteorological institution of education and research must be to bridge the gap between the mathematician and the practical person, that is to make the weather person realize the value of a modest theoretical education and to induce the theoretical person to take an occasional glance at the weather map" - C. G. Rossby

METR 4424 EXPECTATIONS:

Class period structure:

2:00-2:15 One-a-Day assignments (Reading and Analysis Assignments, pop quizzes, etc.)

2:15-2:45 Content Work

2:45-3:15 Oral Presentations (begin Mon Sept 11)

3:15-3:45 In-class Lab Work

One-A-Day's – A journal article will be assigned each class period. These articles are available on the course web site and will relate to the topic of study for the week. You will be responsible for the material in these articles on homework, tests, and the final exam. In addition, there may be a short, timed, graded, in-class analysis exercises to assess your skills/progress. The grades for these exercises will be included in the 30% Laboratory Work/Homework category on the syllabus.

Content Weeks (16): Synoptic History, Analysis, Radiosondes, Theory, Extratropical Cyclones, Tropical Cyclones & Extratropical Transition, Fronts, Jets, Precipitation, Meso-Severe, Meso-Winter, Meso-Lake Effect, Forecasting, Ensemble Techniques, and Applications

In-Class Oral Presentations – Each student will deliver two oral presentations during the course of the semester. The first round of presentation will entail the explanation of a "current" sounding (5 minutes). These presentations will begin on September 11, and conclude about Sept 28. The second presentation will be a comprehensive briefing. It is expected that the second round presentation will be 'instructional', in that topics covered in the class content and reading materials should be invoked during the comprehensive briefing (10 minutes). This second round will commence October 16. Schedules will be announced at a later date. The briefings will comprise one-half of the "Term Project" grade on the syllabus.

Lab Work – Each class period will contain a mix of individual and group laboratory activities related to the content of the week. These labs will consist of a mixture of "all-star" canned cases, and 'near real-time' activities. The grades on the labs will be combined with the 'one-a-day' grades and contribute to 30% of your overall course grade.

Homework – Homework will be assigned as necessary to further develop a topic pertinent to the current weather at the time. It is also possible that you will need homework time to finish your assigned lab, especially if the lab contains a computing component. The grades on your homework assignments will be combined with the laboratory and 'one-a-day' grades.

Term Project – In addition to the in-class oral presentations above, the entire class will participate in an end-of-semester, professional, AMS-style poster session to be held during class hours on Thursday, November 30 in the atrium of the National Weather Center. The poster session will be attended by various faculty and adjunct faculty, and any other interested parties from the weather enterprise in Norman. The details of the subject matter of this poster session will be provided at a later date. This project will comprise the other half of the Term Project category grade on your syllabus.

Mid-term Exams – Two mid-term exams will be administered. The tentative dates for these exams are Monday, September 25, and Monday, November 6. The exam average will comprise 30% of your overall grade.

Final Exam – The final exam is Tuesday, December 12th during the normal class hours and will contribute 20% of your overall grade. The final exam will be comprehensive.

Forecast Contests – Participation in local and national forecast contests will be encouraged, but not required.