Atmospheric Structure and Analysis (ATMS370)
Winter Quarter 2001 (5 credits)

Prerequisite: ATMS301
Class meets: Monday, Wednesday, Friday 1:30–4:20 in ATG 610

Instructors:

Prof. Gregory Hakim
Office: 306 ATG
Phone: 685.2439
hakim@atmos.washington.edu

Dr. Lynn McMurdie
Office: 624 ATG
Phone: 685.9405
mcmurdie@atmos.washington.edu

Office hours: Drop in, or by appointment

Text: Wallace and Hobbs, with supplemental handouts.

Goals of the course:

- Gain an understanding of synoptic weather systems and weather forecasting.
- Learn and apply the methods of synoptic analysis.
- Apply dynamical concepts in weather analysis (e.g., geostrophy, thermal wind)

Syllabus

(1) Hypsometric equation; surface pressure reduction to sea level.
(2) Observation decoding; scalar analysis; geostrophic & ageostrophic winds
(3) Surface & isobaric analysis; conceptual models of fronts and cyclones.
(4) Clouds & precipitation patterns in cyclones and fronts.
(5) Weather satellites; visible, infrared, and microwave imagery.
(6) Planetary boundary layer & low-level clouds.
(7) Thickness; thermal wind; jet streams.
(8) Streamlines and trajectories; airstreams; more conceptual models.
(9) Intro to tropical meteorology; easterly waves and tropical storms.

Holidays: 15 Jan., 19 Feb. **Final Exam: Monday 12 Mar. 2:30-4:20 p.m.**

Class format: First hour: lecture. Second and third hours: map discussion and lab.

Grading:
Lab work: 40%
Midterm exam: 25%
Final exam: 30%
Class participation: 5%

Equipment for lab: # 2 pencils; colored pencils: red, blue, green, purple; good, *large* eraser.