

Atmospheric Sciences 5230
Mesoscale Meteorology
Spring 2016

Instructor: Steve Krueger

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<http://www.inscc.utah.edu/~krueger/5230>

Description: Basics of radar meteorology. Quantitative description of cumulus convection, multicell and supercell storms, mesoscale convective systems, downslope windstorms. The goal is to develop a physical and dynamical understanding of mesoscale phenomena. Whenever possible, we will undertake real-time examination of storms as they may develop around the country.

Prerequisite: ATMOS 5000 and ATMOS 5130

Classroom: WBB 820

Class Hours: M W 11:50 a.m. to 1:10 p.m.

HELP! M W 2:00 to 2:45, or by appointment. Email works well.

Holidays: March 14, 16 (Spring Break)

Last day of class: Monday, Apr. 25

Final exam: Tuesday, May 3, 10:30 am – 12:30 pm

Format: Lecture and weekly assigned problem sets.

Grading: The course grade will be determined from problem sets (65%), a final exam (30%), and attendance (5%).

The grading scale will be A: ≥ 90 , B: 80-89, C: 70-79, D: 60-69, F: < 60 .

Class policies: Students must take every exam with exceptions governed by University Policy. Plagiarizing, copying, cheating, or otherwise misrepresenting one's work will not be tolerated.

Missing class will not be penalized directly, but usually results in poor problem set and exam performance. Some course material that you are responsible for will only be presented during lectures (i.e., will not be found in the text or online notes).

Homework is due at the start of class on the due date, unless otherwise noted. *Late homework will not be accepted.*

Required Textbook: *Mesoscale Meteorology in Midlatitudes* by Paul Markowski and Yvette Richardson.

Other Course Materials: The class web page includes links to notes, skew- T log p diagrams, and resources on forecasting convection.

Topics to be Covered (tentative):

- Vertical momentum equation; buoyancy force
- Hodographs
- Radar and its applications
- Mesoscale instabilities
- Convection initiation
- Organization of isolated convection
- Mesoscale convective systems
- Hazards associated with deep moist convection
- Mountain waves and downslope windstorms

Drop and Withdrawal dates:

- Last day to add or drop (delete) classes: Tuesday, March 8 (Students can drop classes by phone or web through this date, and the classes will not appear on their transcripts.)
- Last day to withdraw from classes: Friday, April 1. (Students can withdraw from classes by phone or web, but will “W” will appear on their transcript for these courses.)

Disability Services

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.

All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.