

Earth System Science 124: WEATHER ANALYSIS (Winter 2025)

<http://www.ess.uci.edu/~yu/ess124.html>

Lectures: Tuesdays & Thursdays 2:00pm-3:20pm, HICF 100M

INSTRUCTORS

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COURSE DESCRIPTION

This course provides an overview of weather systems in mid-latitudes and tropics. The fundamental dynamics responsible for these weather systems are described. Elementary weather analysis and forecasting techniques are introduced.

<u>WEEK</u>	<u>DATE</u>	<u>TOPICS</u>	<u>CHAPTER</u>
Week 1	1/07	Properties of the Atmosphere	Ch.1
	1/09	Meteorological Measurements	Ch.2
		Weather Map	Ch.3
Week 2	1/14	Atmospheric Instability	Ch.6
	1/16	Forces and Force Balances	Ch.7
Week 3	1/21	The Development of High- and Low-Pressure Systems	Ch.8
	1/23	Air Masses and Fronts	Ch.9
Week 4	1/28	Extratropical Cyclones East of the Rocky Mountains	Ch.10
	1/30	Extratropical Cyclones Along the East and Gulf Coasts	Ch.11
Week 5	2/04	Freezing Precipitation and Ice Storms	Ch.12
	2/06	Lake-Effect Snowstorms	Ch.13
Week 6	2/11	Midterm Examination	Ch.1-13
	2/13	Cold Waves	Ch.14
		Great Plains Blizzards	Ch.15
Week 7	2/18	Mountain Snowstorms	Ch.16
	2/20	Mountain Winterstorms	Ch.17
Week 8	2/25	Thunderstorms	Ch.18
	2/27	Tornadoes	Ch.19
Week 9	3/04	Hailstorms	Ch.20
	3/06	Lighting	Ch.21
		Downbursts	Ch.22
Week 10	3/11	Tropical Cyclone	Ch.24
	3/13	Flood	Ch.25
		Drought	Ch.26
		Heat wave	Ch.27
Week 11	3/20	Final Examination (1:30pm-3:30pm)	Ch.10-26

Textbook: Robert Rauber, et al., "Severe and Hazardous Weather" (6th Edition), Kendall Hunt Publishing Company.

Grades: Homework (30%), midterm (30%), participation/quizzes (10%) and Final Exam (30%).

Homework: Usually issued on Thursday and due on the following Thursday. There is a 20% penalty per day for late homework. Group answers are not acceptable. Homework will be returned by TAs in the discussion section. It is student's responsibility to make sure that the Instructors receive their homework. **Email answers are not acceptable.** If you turn in your homework after the lectures, you should email the Instructor to notify them where and when you drop the homework.

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