

**Earth System Science 124: WEATHER ANALYSIS (Winter 2015)**  
**(<http://www.ess.uci.edu/~yu/ess124.html>)**

**COURSE TIME**

*Lectures: Tuesdays & Thursdays 9:30-10:50am, RH 184*

**INSTRUCTOR**

*Professor Jin-Yi Yu  
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**COURSE DESCRIPTION**

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

| <b><u>WEEK</u></b> | <b><u>DATE</u></b> | <b><u>TOPICS</u></b>                                  | <b><u>CHAPTER</u></b> |
|--------------------|--------------------|---|-----------------------|
| Week 1             | 1/6                | Properties of the Atmosphere                          | Ch.1                  |
|                    | 1/8                | Meteorological Measurements                           | Ch.2                  |
|                    |                    | Weather Map   | Ch.3                  |
| Week 2             | 1/13               | Atmospheric Instability                               | Ch.6                  |
|                    | 1/15               | Forces and Force Balances                             | Ch.7                  |
| Week 3             | 1/20               | The Development of High- and Low-Pressure Systems     | Ch.8                  |
|                    | 1/22               | Air Masses and Fronts                                 | Ch.9                  |
| Week 4             | 1/27               | Extratropical Cyclones East of the Rocky Mountains    | Ch.10                 |
|                    | 1/29               | Extratropical Cyclones Along the East and Gulf Coasts | Ch.11                 |
| Week 5             | 2/3                | Freezing Precipitation and Ice Storms                 | Ch.12                 |
|                    | 2/5                | Lake-Effect Snowstorms                                | Ch.13                 |
| Week 6             | 2/10               | <b>Midterm Examination</b>                            | Ch.1-13               |
|                    | 2/12               | Cold Waves  | Ch.14                 |
|                    |                    | Great Plains Blizzards                                | Ch.15                 |
| Week 7             | 2/17               | Mountain Snowstorms                                   | Ch.16                 |
|                    | 2/19               | Mountain Winterstorms                                 | Ch.17                 |
| Week 8             | 2/24               | Thunderstorms   | Ch.18                 |
|                    | 2/26               | Tornadoes   | Ch.19                 |
| Week 9             | 3/3                | Hailstorms  | Ch.20                 |
|                    | 3/5                | Lightning   | Ch.21                 |
|                    |                    | Downbursts  | Ch.22                 |
| Week 10            | 3/10               | Tropical Cyclone                                      | Ch.24                 |
|                    | 3/12               | Flood   | Ch.25                 |
|                    |                    | Drought   | Ch.26                 |
|                    |                    | Heat wave   | Ch.27                 |
| Week 11            | 3/20               | <b>Final Examination (8:00am)</b>                     | Ch.10-26              |

**Textbook:** Robert Rauber, et al., "Severe and Hazardous Weather" (4th 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 homeworks. Group answers are not acceptable. Homeworks will be returned by TAs in the discussion section.

It is student's responsibility to make sure that the Instructor 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 homeworks. You should also check the EEE grade book to make sure you received homeworks grades.