

Meteo 415

Forecasting Practicum

Fall 2004

Tu,Th 8:00-9:50 a.m.  
608D Walker  
Office Hours: Appt.

Paul Knight & Jeff Warner  
608A/606 Walker  
863-4229

### Syllabus

Date	Topics	Readings/Exercise
9/2	Overview of Forecasting Intro/ Rules /Journals	Handouts Packet (A-1)
9/7	Tools of the Trade/Sample Fcst Developing the Discipline	Packet (C-1) Packet (I-1)
9/9	Practice Forecast Map Discussion/Post Mortem/Lab	Packet (F -1) Packet (B-1)
-----Start Contest #1 -----		
9/14	Map Discussion/Quiz (I-1) Probability Forecasts	Packet (A-2)
	Temperature Forecasting Forecast #1	Packet (C-2)
9/15	Forecast #2	Packet (B-2)
9/16	Map Discussion/Post Mortem/Lab	
9/21	Quiz (B-2)/Data Interpretation More Forecasting Temperatures	Packet (B-3) Packet (C-
2)	Forecast #3	
9/22	Forecast #4	
9/23	Post Mortem/Lab	
-----End Contest #1/ Start Contest 2 -----		
9/28	Continuity/Tropical storms Forecast #1/ Quiz (B-1)	Packet (F-2)
9/29	Forecast #2	
9/30	Map Discussion/Post Mortem/Lab	
10/5	Continuity /Wind Forecasting Forecast #3/Choose W&F Article	Packet (C-3)
10/6	Forecast #4	Packet (B-4,5)
10/7	Map Discussion/Post Mortem/Fog Fcst	Packet (C-4)

## Lab

Date	Topics	Readings/Exercise
10/12 1,3)	Continuity /MOS / Forecast #5	Packet (E-
10/13	Quiz (B-5)	
10/14	Forecast #6 Map Discussion/Post Mortem/Lab	Packet (E-2)
10/19	-----End Contest #2 ----- Forecast Problem	Packet (I-2)
10/21	Map Discussion/Lab	
10/26	-----Start Contest #3 ----- Continuity /NCEP Models Forecast#1/W&F Presentations 1-4 Quiz (D-1)	Packet (D-1,2)
10/27	Forecast #2	
10/28	Map Discussion/Post Mortem/Lab	
11/2	Model Biases/Fronts/Forecast #3 W&F Presentations 5-8	Packet (D-3)
11/3	Forecast #4	
11/4	Map Discussion/Post Mortem/Lab	
11/9	Continuity/Ensemble Fcsts Quiz (D-5) /Forecast #5 W&F Presentations 9-12	Packet (D-5)
11/10	Forecast #6	
11/11	Map Discussion/Post Mortem/Lab	
11/16	Continuity/Precip Type Quiz (H-2)/ Model Soundings Forecast #7/ W&F Presentations 13-16	Packet (H-1,2) Packet (H-3,4)
11/17	Forecast #8 - Medium Range Forecast	
11/18	Month Long Forecast Issues/Lab	Packet (G-1,2)

11/23 Forecast #9 Packet (H-5)  
Oral Exam  
\* Thanksgiving Break \*

Date	Topics	Readings/Exercise
11/30	Map Discussion/Post Mortem/Forecast #10 (Europe)	
	Quiz on Europe	
12/1	Forecast # 11 (Europe)	
12/2	Map Discussion/Post Mortem/Lab	
12/7	Map Discussion/Post Mortem/Forecast #12 (Europe)	
12/8	Forecast #13 (Europe)	
12/9	Final Quiz/Evaluations/Forecast #14	

-----End Contest #3-----

Contest 1: Individual

Contest 2: Individual or Teams of Your Choice

Contest 3: Teams of My Choice (3 on a team)

**Texts:**

Required

Meteo 415 Packet (~\$15.00 -available at Penn State Bookstore)

Optional- NWS Forecasters Handbook (available on loan)

**Grading:** Grades for this course will be determined in this way:

Contest 1: 5% Contest 2: 10% Contest 3: 20%

Forecast Problems: 15% (10% Oral Exam, 5% Problem)

Gradeable Map Discussion: 10%

Quizzes: 10%

Weather Journal: 2%

Presentations: 3% (W&F journal article)

Lecture/Lab Exercise Portion: 25% (Thursdays with Jeff Warner)

College Academic Integrity web site:

<http://www.ems.psu.edu/students/integrity/index.html>

Weather Journals: There will be one journal to be handed in during Contest Three. A sheet of paper will be sufficient for the entire journal. The journal should contain an entry for one forecast as designated by the instructor. You should include your forecast slip and the verification. The purpose of the journal is to have you evaluate your forecast with the actual weather. The journal is to be typed and expected to reflect your learning of atmospheric processes and/or model error. A short paragraph or two is enough.

Map Discussions: During the first contest and part of the second contest, the instructor will lead a map discussion of the current weather conditions. There will be sample questions given each time to prepare you for 'your' gradeable map discussion during the second half of the semester. Plan on paying close attention to the answers.

Post Mortem Discussions:

The instructor will lead a follow-up discussion of the previous days forecast. You will be expected to participate regularly and will be called on for answers.

Weather & Forecasting Journal Presentation:

Each student will give a 3-5 minute summary of an article from either Weather and Forecasting or Monthly Weather Review. The content will be agreed on with the instructor. There will be several presentations given during each Tuesday class in October and November.

Quizzes and Forecast Problems: There will be ten short quizzes covering basic forecast material, climatology, topography and model output. The subject matter will generally be limited to the material listed from the packet that week. Bonus Quiz: There will be several opportunities to 'reduce' your errors with an on-line optional quiz.

Forecast Problem will take most of the period in length and will be a practical application of operational forecasting.

Oral Exam: There will be one oral exam late in the semester which will test your ability to express your knowledge of weather forecasting. Each 'interview' will last 5 minutes.

National Collegiate Weather Forecasting Contest:

Participation in the National Forecasting Contest is strongly recommended. This added opportunity to learn about weather forecasting will only enhance the instruction in this course.

E-mail and Class Updates: Since the time needed to forecast this semester is very valuable, You will be sent an e-mail message the evening before class alerting you to where we will be forecasting for that class period as well as the excel forecast form. At times, other important class-related information will be sent to you by this e-mail method. (job notices, special seminars or training sessions). Please plan on regularly checking your e-mail.

#### METEO 496 Option - SPECIAL TOPICS IN WEATHER FORECASTING

There will be a one credit addition (only for those enrolled in Meteo 415) to explore three aspects of weather prediction:

- Nowcasting - very short range predictions (technique of communication)

- Pattern Recognition - enhancing, applying and verifying an AI approach

- Medium Range Forecasts - refining analog predictions with downscaling

Enrollment will be limited to 6 students and there will be a 1 hour meeting every other week at a mutually convenient time. If you are interested, you must see Paul Knight to enroll - deadline for enrollment is Thursday, September 9.