

# MET 3503/5503 Syllabus

## Weather and Forecasting

**Instructor:** Stephen Mullens – stephen.mullens@ufl.edu

**Office:** Turlington 3126-B

**Office Hours:** Tuesdays 9:35-12:35; Thursdays 10:40 – 12:35 & 1:55-2:45; or by appointment

### **Class times:**

Tuesdays at 8:30-9:20am, Thursdays at 8:30-10:25am

Turlington Hall 3006

### **Textbook:**

Cox, John D., 2002: *Storm Watchers: The Turbulent History of Weather Prediction from Franklin's Kite to El Niño*. Wiley, 252 pp.

**Other materials:** Colored pencils (Red, Blue, Green, Purple, Brown, Black)

### **Course Objectives – What we're going to cover:**

- Apply the forecast process when making your own weather forecasts.
- Analyze current weather through satellite and radar imagery.
- Translate raw meteorological surface and upper air observations.
- Plot translated meteorological observations onto maps.
- Evaluate weather conditions through hand-analyzed meteorological observations.
- Explain the physics underlying current synoptic and mesoscale storm developments.
- Explain wind-related forces and how they contribute to geostrophic, gradient, and hydrostatic force balances.
- Plot meteorological rawinsonde observations onto thermodynamic charts.
- Analyze thermodynamic charts and evaluate the potential weather that might occur.
- Explain how common meteorological indices are calculated from thermodynamic charts.
- Explain how the quasigeostrophic equations are useful for determining areas of rising motion and forecasting synoptic scale weather.
- Evaluate numerical model output to make a weather forecast.

### **Grading Structure:**

15% - Exam 1

20% - Exam 2

15% - Weather Briefings

20% - Lab Exercises

10% - Reading Homework

15% - Final Project

5% - Attendance

**Grades:**

A	92.0-100%	B+	87.0-89.9%	C+	77.0-79.9%	D+	67.0-69.9%
A-	90.0-91.9%	B	83.0-86.9%	C	73.0-76.9%	D	63.0-66.9%
		B-	80.0-82.9%	C-	70.0-72.9%	D-	60.0-62.9%

**No classes on:**November 28<sup>th</sup> – Thanksgiving DayDecember 5<sup>th</sup> – Reading Day**Tentative Weekly Schedule:**

Week	Tuesday: 2	Thursday: 2-3
19-Aug	Introduction	Forecasting Process <i>Ch 1,2 due</i>
26-Aug	METAR codes	Isopleths <i>Ch 3 due</i>
2-Sep	Wx discussion 1	Fronts <i>Ch 4, 5, 6 due</i>
9-Sep	<b>NWA</b>	Satellite Interpretation <i>Ch 7, 8, 9 due</i>
16-Sep	Wx discussion 2	Radar Interpretation <i>Ch 10, 11 due</i>
23-Sep	Wx discussion 3	Forces / Wind
30-Sep	Review	<b>Midterm</b>
7-Oct	Wind Balances	Wind Balances <i>Ch 12, 13, 14 due</i>
14-Oct	Skew T	Skew T <i>Ch 15, 16, 17 due</i>
21-Oct	Wx discussion 4	Stability <i>Ch 18, 19, 20 due</i>
28-Oct	Wx discussion 5	Vertical Motion <i>Ch 21, 22 due</i>
4-Nov	Wx discussion 6	QG Theory <i>Ch 23, 24 due</i>
11-Nov	Wx discussion 7	Models <i>Ch 26, 27 due</i>
18-Nov	Wx discussion 8	Review <i>Ch 25, 28 due</i>
25-Nov	<b>Final Project</b>	<b>Thanksgiving Day</b>
2-Dec	<b>Final Project</b>	<b>Reading Day</b>
9-Dec	<b>Exam 3-5pm on Dec 11<sup>th</sup></b>	

## **UF POLICIES**

### **ACADEMIC HONESTY:**

You are all bound by the student academic honor code.

“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”

“On my honor, I have neither given nor received unauthorized aid in doing this assignment”

### **ACCOMMODATIONS:**

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc](http://www.dso.ufl.edu/drc)) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

### **EXCUSED ABSENCES:**

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

I appreciate that unexpected events occur in all of our lives. Acceptable reasons for absence from or failure to participate in class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays, court-imposed legal obligations, and participation in official university activities such as music performances, athletic competition or debate. If such events occur, and it causes you to attend an event (e.g., funeral, job interview) or a facility (e.g., doctor’s office, courthouse), then you will need to prove that you went to this event/facility on that date by providing some form of documentation of the event. An event program, a doctor’s note, or similar paperwork will suffice. Upon producing this documentation, you will be able to make up the midterm exam or any graded class activities from that date.

A student should inform the faculty member of the religious observances of his or her faith that will conflict with class attendance, with tests or examinations, or with other class activities prior to the class or occurrence of that test or activity.

### **DISCLAIMER:**

This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.