

MET 3503/5503 Syllabus

Weather and Forecasting

Instructor

Stephen Mullens, stephen.mullens@ufl.edu

My office: Turlington Hall, Geography Department, Room 3126-B (room in a room)

Office hours: Monday-Wednesday-Friday periods 4, 6 (10:40-11:30am, and 12:50-1:40pm). You can sign up for online or live office hours using the Canvas calendar. You can also just stop by if nobody is scheduled for that time. If you want to make an appointment at another time, just email me. I will try to accommodate you as my schedule permits.

Class times:

Time: Monday-Wednesday-Friday period 8, 3:00-3:50pm

Location: Turlington Hall 3018

Textbook:

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

Stull, Roland, 2018: *Practical Meteorology: An Algebra-based Survey of Atmospheric Science*. version 1.02b. Univ. of British Columbia. 940 pages. isbn 978-0-88865-283-6.

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:

- 10% - Book Homework
- 20% - Homework
- 15% - Weather Discussion
- 15% - Exam 1
- 20% - Exam 2
- 15% - Final Project
- 5% - Attendance

Grades:

	B+	87.0-89.9%	C+	77.0-79.9%	D+	67.0-69.9%	
A	93.0-100%	B	83.0-86.9%	C	73.0-76.9%	D	63.0-66.9%
A-	90.0-92.9%	B-	80.0-82.9%	C-	70.0-72.9%	D-	60.0-62.9%

Schedule

The precise dates may change. I will update you as we go.

Week starting	Monday	Wednesday	Friday	Readings
31-Aug	Introduction	Review temp/stability	Review moisture	Ch 1,2
7-Sep	Labor Day	Review wind forces		Ch 4,5,6
14-Sep	Review air masses	Review ETC life cycle	Review ETC impacts	Ch 7,9
21-Sep	Forecast process	METARs		Ch 10,12
28-Sep	Map Analysis		Homecoming	Ch 13,14
5-Oct	Upper Air Analysis		Skew T's	Ch 3,17
12-Oct	Lapse Rates	Stability	Skew T Indices	
19-Oct	Review	Midterm Exam	Satellite	
26-Oct	Discussion 1		Radar	Ch 18,19
2-Nov	Discussion 2	Wind forces		Ch 20,24
9-Nov	Discussion 3	Veterans Day	Air masses & fronts	Ch 21
16-Nov	Discussion 4	Jet streams	Review ETC life cycle	Ch 22,27
23-Nov	No class	Thanksgiving		
30-Nov	Discussion 5	Numerical Wx Models	Review	Ch 11,23,26
7-Dec	Discussion 6	Final Exam	Reading Day	
--	Finals Project – Tuesday, Dec 15, 12:30-2:30pm			

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) 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.