

METR 2021 – Introduction to Meteorology II Laboratory

Syllabus: Spring 2009

Instructor: Patrick Marsh
Office: NWC 5234 (may change during semester)
Office Hours: Monday afternoons, or by appointment
Email: patrick.marsh@ou.edu (by far the best way to reach me)
My Calendar: <http://blog.patricktmarsh.com/calendar.php>

Content: This lab will complement but not necessarily follow the lecture material directly. Special emphasis will be given to utilizing computational tools such as EXCEL, Matlab, Python, and GEMPAK to study the atmosphere.

Goals:

1. Apply concepts taught in the lecture portion of this course (atmospheric forces, force balances, global circulation, mid-latitude cyclones, mesoscale weather phenomenon, climate change) to analyze data provided or collected throughout the lab.
2. Create and interpret key meteorological features on surface and upper-air maps.
3. Use scientific computing resources (e.g., Excel, Matlab, Perl, Python) to answer questions about various atmospheric processes including: global circulation, mid-latitude cyclones, tropical cyclones, and severe weather.

The Official Description from the OU catalog:

METR 2021-Introduction to Meteorology II Laboratory: Reinforces the theoretical concepts provided in the counterpart lecture course Meteorology 2023, which introduces students to important phenomena and physical processes that occur in the earth's atmosphere. Through a series of laboratory exercises, students will learn the basic concepts and tools that are used to study atmospheric problems. Special emphasis will be placed on developing information technology and computational skills. The laboratory exercises target the topics covered in the lecture component.

Text: *Required* – “Linux in a Nutshell”, (5th edition) – by Seiver, Weber, Figgons, Love, and Robbins. O’Reilly Media Inc.

Other handouts as given by instructor

Grading:	Approximately 15 Lab assignments	25 pts each	375 pts
	Lab Quizzes	10 pts each	140 pts
	Forecast Notebook	15 pts each collection	75 pts
	Class Participation		<u>60 pts</u>
			~ 650 pts

Grading Scale:

90-100	(585 – 650 pts)	A
80-89	(520 – 584 pts)	B
70-79	(455 – 519 pts)	C
60-69	(390 – 454 pts)	D
00-59	(< 389 pts)	F

Lab Schedule: (Subject to change)

Week	Topic
Week 1	Forecast Funnel
Week 2	Introduction to Scripting
Week 3	Making Model Maps
Week 4	Force Balances
Week 5	Semi-permanent Wx Systems
Week 6	<i>TBD</i>
Week 7	Div, Conv, Vorticity
Week 8	Upper-level Advections
Week 9	<i>SPRING BREAK</i>
Week 10	Mid-lat Cyclones
Week 11	Surface Analyses
Week 12	How Models Work
Week 13	Severe Weather Forecasting
Week 14	Tropical Meteorology
Week 15	<i>TBD</i>
Week 16	Climate Change

Lab Assignments: Lab assignments must be turned at the beginning of the next lab period, before the next lab begins. The only exceptions will be for extenuating circumstances (i.e. death in the family, hospitalization, etc.) when I am notified at least 24 hours in advance.

Forecast Notebook: You will be expected to keep a forecast notebook for the weather challenge. It will be collected after each forecast city during the following lab session. You will be expected to keep track of the weather one week before forecasting begins for the city, plus the two weeks of forecasts. Your forecast notebook should just be a Microsoft Word document which you will submit to me via the Subversion repository. We'll discuss this more in class. More details are available on the forecast notebook handout.

Holidays: Spring Break – No class March 17th.

Attendance: You are expected to attend every lab session, although attendance will not be taken, it will factor into your class participation grade. The material learned in one class is connected to other material learned in the class on other days, so it is to your advantage to attend every lab, for the full time. Quizzes will be given during most lab periods throughout the semester.

Web Page: This course has a web page located at: <https://learn.ou.edu> . All grades will be posted on this class website and if you have any questions about what has been posted contact me immediately. Additional materials will be posted at <http://code.patricktmarsh.com/metr> which is a Subversion repository (you'll learn about this during week 2). Stayed tuned for more details as they come.

WxChallenge: You are required to sign-up for the WxChallenge (<http://wxchallenge.com/>) hosted here at OU. This will give you an opportunity to begin honing your forecasting skills for many different parts of the U.S. and probably even a Canadian city. You will not be formally graded on your forecasts, except for recording them in your forecast notebook and turning it in at the requisite times. If you beat me in one or two forecast cities you will receive 10 pts extra credit (equivalent to one lab quiz). If you beat me three or four cities out of a possible five during the semester, then you will receive 25 pts extra credit (equivalent to one lab grade). If you beat me all five cities, then we will discuss when the time comes.

Academic Misconduct:

Academic misconduct is a serious breach of ethics since it potentially can harm those students who are honestly pursuing their studies. All instances of alleged academic misconduct will be thoroughly investigated and action taken under the official university policies.

You are allowed to work with fellow classmates on any and all lab assignments; however, each and every lab must be your own work with your own write-up. Any copying is strictly prohibited and will result in a zero on that assignment and the loss of any extra-credit opportunities for the entire semester.

Needed Disclaimer:

"The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations in this course are requested to speak with the professor as early in the semester as possible. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or TDD only 405/325-4173."