

METR 2603-001 – Severe and Unusual Weather

Spring 2010 Syllabus

Lecture: MWF 9:30 – 10:20 AM, SEC N202A

Instructor: Rebekah LaBar (rebekahlabar@ou.edu or eburgwind@hotmail.com)

Office: SEC 526

Office Hours: Mondays 10:30 – 11:30 AM, or by appointment

Content: Severe and Unusual Weather is a non-majors course that serves as a General Education Core II Natural Science Elective (non-lab). It is designed to provide students with an in-depth look at the physical and societal aspects of severe and unusual weather. Specific topics to be covered include thunderstorms, tornadoes, hail, lightning, tropical cyclones, ice storms, lake-effect snowstorms, blizzards, El Niño, and severe weather forecasting.

Course Objectives: At the conclusion of this course, students should

- Know basic properties of the atmosphere and how to interpret weather maps, charts, and symbols
- Be able to define meteorological terms and do some basic physical calculations
- Be able to correctly identify severe and unusual weather phenomena and understand their underlying physical processes
- Know and be able to explain climatological and geographical distributions of severe and unusual weather phenomena
- Be able to analyze and discuss meteorological events scientifically
- Understand the societal impacts of severe and unusual weather

Required Textbook: Rauber, Robert M., J. E. Walsh, and D. J. Charlevoix. *Severe and Hazardous Weather: An Introduction to High Impact Meteorology* (3rd ed.), Kendall/Hunt.

Web Component: Course documents and grades will be disseminated through the OU online course management system, Desire2Learn (D2L): <http://learn.ou.edu>. The website associated with the textbook is <http://severewx.atmos.uiuc.edu/>.

Grading:

In-class activities and quizzes	15%	150 pts.
Homework	30%	300 pts.
Essay	15%	150 pts.
Midterm exams (2)	20%	200 pts.
Final (comprehensive) exam	20%	200 pts.
TOTAL	100%	1000 pts.

Grading Scale:	A	90 – 100%
	B	80 – 89%
	C	70 – 79%
	D	60 – 69%
	F	< 60%

Attendance: Although attendance is not required, you are expected to attend every lecture. In-class activities and quizzes will factor into your class grade. These exercises cannot be made up; no exceptions. Most course material builds on itself, so it is to your advantage to attend every lecture in order to maintain continuity of information. At the end of the semester, I will drop your two lowest quiz or activity scores.

Homework: Various homework assignments will be given throughout the semester, based on concepts learned in class. Homework **must** be turned in during class, on or before the assigned due date. Homework that is up to one class day late will only receive half credit. Homework that is more than one class day late will receive NO credit. However, if you have to miss class on a homework due date, due to unforeseen circumstances such as an illness, immediate family emergency, or university-excused absence, let me know as soon as possible. In such a case, with appropriate documentation, you may turn in your homework on the first possible class day after you get back (for up to one week) and still be eligible for full credit.

Essay: Choose a severe weather event to study. The event may be either current or historical. You must write a 4 to 6 page essay about the event (double-spaced, not including figures), demonstrating a clear understanding of how the event relates to concepts learned in class. Details will be provided soon. The essay **must** be turned in on time; you will have all semester to work on it, and may even turn it in early.

Exams: There will be two midterm exams and a comprehensive final exam, based largely upon material from the last third of class. Exams **must** be taken on the scheduled date, with few exceptions, at the discretion of the instructor. If you have a legitimate reason to be absent from an exam, such as an illness, immediate family emergency, or university-excused absence, please let me know as soon as possible, preferably before the exam. In such a case, with appropriate documentation, a make-up exam may be given. Make-up exams must be taken before or within one week of the originally scheduled exam date.

Student Conduct: All laptops **must** remain closed and all cell phones **must** be turned off or turned to silent during class. I will do my best to start and end class on time, and I will consider it rude if you walk in late or leave early. If you absolutely must do so, then please be as quiet as possible. Please help to make this class a positive learning environment.

Academic Integrity: Academic misconduct, including cheating on exams and plagiarizing, will not be tolerated in this course. All students are encouraged to read the official University policy on academic integrity and misconduct at <http://www.ou.edu/provost/integrity>. All alleged instances of academic misconduct will be investigated and, if substantiated, appropriate admonitions will be imposed.

Student Privacy: I am committed to keeping all your personal information and grades private in accordance with the Federal Educational Rights and Privacy Act. As such, I will not share information on your performance in this class with any third party without written permission from you, the student.

Disability Policy: The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations are requested to speak with me 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 325-3852 or TDD only 325-4173.

METR 2603-001 Class Schedule

(Note: Schedule is fluid and subject to change)

January 20 – January 22: Atmospheric properties

- **Chapter 1**

January 25 – January 29: Measurements, weather maps

- **Chapters 2 and 3**

February 1 – February 5: Climate, climate change, stability

- **Essay topic DUE on Monday, February 1st**
- **Chapters 5 and 6**

February 8 – February 12: Forces, force balances, high and low pressure systems, airmasses and fronts

- **Essay topic paragraph DUE on Monday, February 8th**
- **Chapters 7 – 9**

February 15 – February 19: TBD

- **EXAM 1 on Friday, February 19th**

February 22 – February 26: Extratropical cyclones, freezing precipitation, ice storms

- **Chapters 10 – 12**

March 1 – March 5: Lake-effect snow, blizzards, mountain snowstorms, mountain windstorms

- **Chapters 13 and 15 – 17**

March 8 – March 12: Thunderstorms

- **Chapter 18**

March 15 – March 19

- **NO CLASS – SPRING BREAK!**

March 22 – March 26: Thunderstorms, downbursts

- **Essay outline DUE on Monday, March 22nd**
- **Chapters 18 and 22**

March 29 – April 2: Hail

- **EXAM 2 on Wednesday, March 31st**
- **Chapter 20**

April 5 – April 9: Lightning, tornadoes

- **Chapters 21 and 19**

April 12 – April 16: Tropical cyclones

- **Chapter 24**

April 19 – April 23: Tropical cyclones, floods, droughts, teleconnections

- **Optional essay draft (extra credit) DUE on Monday, April 19th**
- **Other extra credit DUE on Friday, April 23rd**
- **Chapters 23 – 26**

April 26 – April 30: Teleconnections, aviation weather hazards, weather models

- **Essay DUE on Friday, April 30th**
- **Chapters 23 and 4**

May 3 – May 7: TBD

Final Exam on Monday, May 10th from 8:00 – 10:00 AM!