EOS-310
Severe & Unusual Weather
Spring, 2009
Associate Prof. Zafer Boybeyi
Instructor and Contact information

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• This course is a general introduction to severe and unusual weather, covering the key concepts from thermodynamics, radiation, and dynamics that are essential for understanding severe and unusual weather.

• Emphasis will be upon critical reasoning and everyday occurrences as tools to understand our weather.

**Prerequisites:** None
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Goals:
To provide the student with:

• an overview of the physical and dynamical processes which control the state and evolution of the Earth’s weather.

• an understanding of the key scientific discoveries and remaining unanswered questions in severe and unusual weather.

• an overview of the primary scientific principles and analytical tools used in weather studies, including numerical weather prediction models.
Course Content:

- This course consists of an overview of our weather, radiation, chemistry, and atmospheric dynamics, leading to a discussion of the future of Earth’s atmosphere and human impacts.

- Emphasis will be placed on qualitative explanations, based upon everyday occurrences, of the processes that control the severe and unusual weather of the Earth’s atmosphere (e.g., frontal cyclones, blizzards, severe thunderstorms, tornadoes, lightning, hailstorms, hurricanes, floods, drought, unusual weather patterns, and other unusual storms).

- This course would be useful for any student wanting a one-semester overview of our weather.
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Suggested Text Book:

- **Severe & Hazardous Weather**
  Robert M. Rauber, John E. Walsh and Donna J. Charlevoix
  ISBN 978-0-7575-5043-0
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Class format will consist of:

• Lectures covering material in the suggested text book
• Homework assignments
• Reading assignments
• Group discussion
• Midterm exam
• Final exam
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Chapter structure:
• Major content (Be sure to read everything before you come to class!)
• Chapter Summary
• Review Questions (Excellent review for exams)
• Problems
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**Useful websites:**

American Meteorological Society:
http://www.ametsoc.org/

National Aeronautics and Space Administration:
http://www.nasa.gov

National Oceanic and Atmospheric Administration:
http://www.noaa.gov/

The Weather Channel:
http://www.weather.com/
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Tentative Grading Policy:

• Homework: 20%
• Midterm: 30%
• Final exam: 40%
• Participation: 10%

You are responsible for all material from the text, and any additional assigned readings.
GMU Honor Code

Honor Code To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the University Community have set forth this Honor Code

Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.

http://www.gmu.edu/departments/unilife/pages/honorcode.html
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Class start the week of January 21, 2009
Class duration (Jan 21, 2009 – May 5, 2009)
Spring break (March 9, 2009 - March 15, 2009)

(1) Jan 21, Chapter # 1
(2) Jan 26 & 28, Chapters # 2 & 3
(3) Feb 2 & 4, Chapters # 4 & 5
(4) Feb 9 & 11, Chapters # 6 & 7
(5) Feb 16 & 18, Chapters # 8 & 9
(6) Feb 23 & 25, Chapters # 10 & 11
(7) March 2, Chapters # 12
(8) March 4 Midterm Exam
(9) March 9 & 11, (Spring Break)
(10) March 16 & 18, Chapters # 13 & 14
(11) March 23 & 25, Chapters # 15 & 16
(12) March 30 & Apr 1, Chapters # 17 & 18
(13) Apr 6 & 8, Chapters # 19 & 20
(14) Apr 13 & 15, Chapters # 21 & 22
(15) Apr 20 & 22, Chapters # 23 & 24
(16) Apr 27 & 29, Chapters # 25 & 26
(17) May 4, Chapters # 27
(18) May 11 Final Exam

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Midterm Exam:
• March 4, 2009 12:00 noon – 1:15pm

Final Exam:
• May 11, 2009 12:00 noon – 1:15 pm
Office Hours

Associate Prof. Zafer Boybeyi

Office Hours:
Monday: 10:00am – noon
Wednesday: 10:00am - noon
Additional hours by appointment

Spring 2009: Tentative Travel
• None