Course Information
Title: Introduction to Weather and Climate (GGS 309)
CRN: 13134
Time: 1:30pm-4:10pm, Thursdays, 01/23-05/17/2017
Location: Exploratory Hall 2312
Instructor: Prof. John J. Qu
Teaching Assistant: Mr. Min Shao
Telephone: (703) 993-3958
Office: Room 3411, Exploratory Hall
Office Hour: Stop by 10:00-12:00PM Thursdays or make appointment

Office Hours: Stop by at 10:00 AM -12:00 PM on Thursdays or make appointment

Course Description
This course will introduce the students to the fundamental principles upon which the atmosphere and climate sciences are based and to provide quantitative description and interpretation of the wide range of atmospheric observing the atmosphere phenomena with an emphasis on sub-synoptic scales (i.e. weather and regional scale climate). This course engages students with real-world examples and a captivating narrative. One of the main goals of this course is not only to provide the basic knowledge of fundamentals of the weather and climate, but also to prepare students for the science of atmospheric modeling and simulations. This course is designed for both science majors and non-majors taking their first course in weather and climate sciences.
Prerequisites: MATH 214 and PHYS 262, or permission of instructor.

Schedule

<table>
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<tr>
<th>Week one: 01/26</th>
<th>Introduction to the Atmosphere and Climate Science</th>
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| Week two 02/02 | The Energy Cycle  
Chapter two, Introduction to Atmospheric Radiation |
| Week three 02/09 | Temperature  
*Quiz One* |
| Week four 02/16 | Water in the Atmosphere |
| Week five 02/23 | Observing the Atmosphere  
*Quiz Two* |
| Week six 03/02 | Atmospheric Forces and Wind |
| Week seven 03/09 | Global and Small Scale Winds  
*Mid-term* |
| Week eight 03/16 | Spring break |
| Week nine 03/23 | Atmosphere-Ocean Interactions: El Niño and Tropical Cyclones |
| Week ten 03/30 | Air Masses and Fronts  
*Quiz Three* |
| Week eleven 04/06 | Extratropical Cyclones and Anticyclones |
| Week twelve 04/13 | Thunderstorms and Tornadoes |
| Week thirteen 04/20 | Weather and Climate Forecasting  
*Quiz Four* |
| Week fourteen 04/27 | Past and Present Climates |
| Week fifteen 05/04 | Human Influences on Climate |
| Week sixteen 05/11 | *Final Exam* |

Grading

- Class attending: 5%
- Quizes: 20%
- Homework: 20%
- Midterm: 25%
- Final Exam: 30%
Textbooks


Honor code

Students must follow the GMU Scholastic Honor Code. Please show respects to everyone in the classroom. Copying homework (or quiz) is considered cheating.

Useful Links

1. WMO
2. NOAA/CDC
3. NOAA/NCDC
4. IPCC
5. Climate Conference in Copenhagen, 2009
6. COP21
7. Climate Change Science Compendium 2009 by UNEP
8. Global Weather Maps