

COURSE INFORMATION AND OBJECTIVES
WEATHER AND CLIMATE
PGEOG 13000

PROFESSOR FRANK BUONAIUTO

CLASS MEETINGS:

LECTURES: Tuesday /Friday, 14:10-15:25, Room W615 Hunter West

PROFESSOR BUONAIUTO CONTACT INFORMATION:

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Tel. 212-650-3092
Office Hours: Tuesday, 4:00 – 5:00, *and by appointment.*

* **Note:** the best way to contact me is through your **Hunter College email** – (1) You must include the course name or number in your subject line and (2) you must sign your name as it appears in CUNYfirst in your email. I try to answer all emails within 24 hours. Allow for a 48 hour delay on the weekends.

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice. Updates will be posted regularly on BlackBoard.

INFORMED REGISTRATION STATEMENT

In this 4-credit course we will explore meteorology and climatology. Topics will include weather forecasting, climate change and environmental issues relating to weather and climate. This is a lab science course and can be used to meet the GER2E General Education Requirement and can meet the Physical and Life Science category of the Hunter Common Core.

COURSE DESCRIPTION, LEARNING OBJECTIVES AND OUTCOMES

This course will describe the basic principles and elements that shape and determine our weather and the earth's climate. The course will begin with a discussion of the Earth System, with particular emphasis on the atmosphere. Next, we will discuss the energy that drives all we observe in the atmosphere. The first part of the course will concentrate on describing in some detail the elements that are common to weather and climate: temperature, pressure, moisture, clouds and winds. The second part of the course will, then, concentrate on how all those elements, working together or by combinations, determine the general circulation patterns in the atmosphere and oceans, as well as our weather patterns. Finally, we concentrate on air pollution and the changing climate and in this context; we will discuss some current issues, such as the potential impact that humans have on climate and climate change.

The student who successfully completes this course can:

- recognize the methodologies employed by natural scientists.

- discuss the nature of scientific inquiry and recognize examples of hypotheses formulation and testing as well as the development of some significant scientific theories.
- define the basic chemistry and physics of atmospheric processes.
- explain the development of weather analysis and forecasts.
- identify past changes in climate and how they may provide insight into the present and future states of the planet.
- explain feedback mechanisms and distinguish between time scales of operation.
- discuss world climate distribution and how it relates to the general circulation of the atmosphere.
- apply for advanced courses in climatology and meteorology

REQUIRED TEXT BOOK

The Atmosphere: An Introduction to Meteorology, 13th edition, Lutgens and Tarbuck, 2013. Pearson/Prentice Hall.

- ISBN-13: 9780321987549
- (12th or 11th Editions are acceptable).

ADDITIONAL PURCHASING OPTIONS FOR TEXT AND LAB MANUAL MAY BE FOUND:

http://www.geo.hunter.cuny.edu/~tbw/wc.labs.spring.2016/lab_manual.textbook.info.htm

REQUIRED COURSE LAB MANUAL

Exercises for Weather and Climate, by Greg Carbone, 9th Edition

- ISBN-13: 9780134041360 (\$71)
- eBook Version is not recommended, plagued with printing limitations

(You must have your lab manual for the first day of lab.)

You must be registered for a weekly lab. Lab schedules can be found at:

<http://www.geo.hunter.cuny.edu/tbw/wc.LABS.spring.2017/index.html>

GRADES

Grades will be based on class participation, homework assignments, two mid-term exams and one final exam.

Pre-Lab Quizzes:	5%
Lab Exercises (11):	35%
Mid-term exams (2):	40% (20% each)
Final exam:	20%

EXAMS and ASSIGNMENTS

Exams and quizzes will be based on the material covered in class and in the textbook. Dates are **CLEARLY** posted in the syllabus of the course and are set from day one. See the syllabus for exam dates and information about which chapters will be covered.

About examinations and grades:

- I use the Hunter College Grading System that can be found at <http://catalog.hunter.cuny.edu/content.php?catoid=23%navoid=3149>
- Examinations are 1 hour and 15 minutes for the mid-term and 2 hours for the final exam and must be turned in promptly. If you arrive late, you lose that time.
- Make-up exams are ONLY available in extreme cases, and with medical (or other) forms that confirms the absence.
- I will automatically agree to the CR-NCR option only if the conditions stated in the CR-NCR form are satisfied: all course work has been completed and you earned grades such that you accumulate at least 50 points total in the course. Students on probation are not eligible for this option.

RULES and POLICIES FOR LECTURE AND LAB

Attendance in lecture and lab is required.

All students are expected to abide by the following policies when in lecture or lab in order to provide a more respectful and productive learning environment.

- All cell phones must be turned off or switched to quiet mode. If you must take a call please excuse yourself quietly from the room. Please refrain from texting.
- Laptops are permitted for **note taking purposes only**.
- No electronic devices or reference materials will be permitted on the desk during exams.

RULES AND POLICIES FOR EXAMS, QUIZES, LAB ASSIGNMENTS:

- You are responsible for knowing the name of your lecture instructor and lab instructor. You will be required to fill in their names on exams and quizzes so they may be distributed properly. Failure to do so will result in a grade of zero.
- **Pre-Lab Quizzes** You are expected to prepare for your lab class by reading the lab exercise and reviewing your lecture notes and textbook chapter relating to the lab exercise **before** you arrive in lab. There will be a 10 minute quiz at the beginning of lab to test your general knowledge of the lab subject. If you read the lab exercise before lab and review your notes and textbook chapter you will be able to answer the questions.
- It is very important you arrive on time to lab. Pre-Lab quizzes will be given during the first 10 minutes of lab. If you arrive after the quiz has begun you'll have less time to complete the quiz. If you arrive after the quiz is over, no makeup quizzes will be given.
- **WHEN ARE LAB EXERCISES DUE?** Lab exercises are due, in lab, at the next lab meeting. Late labs will have the grade **reduced 20 points for each DAY they are late unless you have a valid excuse that can be documented. Labs are due at the beginning of lab. Once labs are collected by your lab instructor, any labs handed in are considered late.** This policy will be strictly enforced. Lab exercises must be stapled (no paper clips) with your name **printed neatly in the space on**

the first page and in the lower-right corner of the front of every page. Your lab grade will be reduced if you don't follow this policy.

- **WHAT IF I MISS A LAB?** If you miss a lab, do not wait until the next lab meeting to hand in your lab (see above). Attendance will be taken in each lab and is included in your lab grade, this includes lateness. **Unexcused lab absences will result in a lower lab grade. Habitual lab lateness or leaving early can result in points deducted from your lab average.**
- **LAB ATTENDANCE, COMING LATE/LEAVING EARLY** Lab attendance is required (see above). Labs will start and end at the scheduled time. DON'T expect the instructors to privately tutor you if you come late or leave early and then have questions. Plan to be in lab for the entire scheduled time every week. Attendance will be taken as well as notations as to lateness or leaving lab early.
- Xerox copies of your completed lab are not allowed. Only original labs qualify for submission. You may make a blank copy of a lab and then fill in the answers showing your work and calculations
- **I HAVE TROUBLE WITH THE MATH ON LABS, WHAT CAN I DO? Basic function calculators are acceptable in lab.** Calculations involve basic arithmetic and algebra learned in secondary school which should not be a problem. *Calculators are not allowed in exams.*
- **CAN I DO SOMETHING FOR EXTRA CREDIT? LIKE A PAPER?** No. No extra credit is given. Whatever effort you would put into an extra credit assignment, put into completing the labs and studying for exams and quizzes.
- **PLACE NAME QUIZZES** Make up *place name quizzes* are not given for any reason.
- **ARRIVING LATE FOR AN EXAM** Once the first student has completed the exam and left the room no late comers will be admitted to the exam. All late comers admitted to the exam must return their exam at the end of the scheduled exam time. No additional time will be allowed.

As with all courses at Hunter College:

Academic Dishonesty: Please be advised that plagiarism, dishonesty, or cheating in any portion of the work required for this course will be punished to the full extent allowed according to Hunter College regulations.

Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

See the following report by the Hunter College Senate for more details:

<http://www.hunter.cuny.edu/senate/assets/Documents/Hunter%20College%20Policy%20on%20Academic%20Integrity.pdf>

ADA Policy

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230. 5

HELPFUL INFORMATION

My Teaching Philosophy: My goal in teaching is to help students in becoming confident, responsible and educated members of our society. My approach to teaching involves being a facilitator in the learning process and I understand and respect individual differences in learning. I promote technical skills and encourage students to become fully engaged in the subject matter.

I expect students to put their best effort in this course. This involves participating in the in-class discussions, reading the assigned material, completing all assignments and preparing for exams.

Lecture: I will spend part of the lecture time explaining the key concepts of weather and climate as well as reviewing current regional and global data. You are expected to devote time outside the classroom to understand the concepts, and review questions given at the end of chapters in the textbook, or questions that I provide online. I expect that lectures will give you a clear idea of what is expected in exams and for assignments.

Finally: It is important to start with a good study habit. Consistency is the key. Forming study groups is extremely helpful. Use my time and any resource available to you throughout the semester. Make progress steadily as the material in this course cannot be understood the night before the exam. Concentrate on understanding rather than 'regurgitating'.

The following are useful tips to do well in this or any class:

- Attend class and take detailed notes.
- Read the assigned material in the text (or other) **before** coming to class.
- Re-write your notes as soon as possible after class. This will allow you to fill in the details still fresh in your memory, and prepare questions for the next time the class meets.
- Test yourself by answering the questions in the book and in class.

Carefully study the diagrams and charts in the book and in the lectures.

Schedule of Topics and Readings				
Month	Date	Day	Topic	Reading
Jan	31	Tue	Introduction to the Atmosphere	Chapter 01
Feb	03	Fri	Introduction to the Atmosphere	Chapter 01
	07	Tue	Heating Earth's Surface and Atmosphere	Chapter 02
	10	Fri	Heating Earth's Surface and Atmosphere	Chapter 02
	14	Tue	Temperature	Chapter 03
	17	Fri	Temperature	Chapter 03
	21	Tue	Moisture and Atmospheric Stability	Chapter 04
	24	Fri	Moisture and Atmospheric Stability	Chapter 04
	28	Tue	Mid Term Exam I	Chapters 01-04
Mar	03	Fri	Condensation and Precipitation	Chapter 05
	07	Tue	Condensation and Precipitation	Chapter 05
	10	Fri	Air Pressure and Winds	Chapter 06
	14	Tue	Air Pressure and Winds	Chapter 06
	17	Fri	Circulation of the Atmosphere	Chapter 07
	21	Tue	Circulation of the Atmosphere	Chapter 07
	24	Fri	Air Masses	Chapter 08
	28	Tue	Weather Patterns	Chapter 09
	31	Fri	Weather Patterns	Chapter 09
Apr	04	Tue	Mid Term Exam II	Chapters 05-9
	07	Fri	Thunderstorms & Tornadoes	Chapters 10
	11	Tue	Spring Recess College Closed	
	14	Fri	Spring Recess College Closed	
	18	Tue	Spring Recess College Closed	
	21	Fri	Hurricanes	Chapter 11
	25	Tue	Hurricanes	Chapter 11
	28	Fri	Weather Forecasting	Chapter 12
May	02	Tue	World Climates	Chapter 15
	05	Fri	World Climates	Chapter 15
	09	Tue	Air Pollution	Chapter 13
	12	Fri	Climate Change	Chapter 14
	16	Tue	Climate Change	Chapter 14
	19	Fri	Reading Day	
	23	Tue	11:30 - 1:30	All Fair Game

COURSE WEBSITE: http://www.geo.hunter.cuny.edu/~fbuon/PGEOG_130/wc06.html