

COURSE INFORMATION AND OBJECTIVES
INTRODUCTION TO WEATHER, CLIMATE & CLIMATE CHANGE
PGEOG 14000

PROFESSOR FRANK BUONAIUTO

CLASS MEETINGS:

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

PROFESSOR BUONAIUTO CONTACT INFORMATION:

Office Department of Geography, Room1049 Hunter North
E-mail fbunaiu@hunter.cuny.edu (*)
Tel. 212-650-3092
Office Hours: Tuesday, 5:30 – 7:00, *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 class does not fulfill any of the Hunter College Common Core, however, it is considered a fundamental course for students pursuing a major in Environmental Sciences.

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).

GRADES

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

Class participation:	10%
Homework Assignments:	30%
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

Attendance in lecture is required.

All students are expected to abide by the following policies when in lecture 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.
- **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.

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

Hunter College Policy on Sexual Misconduct

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College affirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationship. Students who have experienced any form of sexual

violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

- a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, on contacting the College's Public Safety Office (212-772-4444)
- b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) of Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link:

<http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf>

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.
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Schedule of Topics and Readings				
Month	Date	Day	Topic	Reading
Aug	25	Fri	Introduction to the Atmosphere	Chapter 01
	29	Tue	Introduction to the Atmosphere	Chapter 01
Sep	01	Fri	Heating Earth's Surface and Atmosphere	Chapter 02
	05	Tue	Heating Earth's Surface and Atmosphere	Chapter 02
	08	Fri	Temperature	Chapter 03
	12	Tue	Temperature	Chapter 03
	15	Fri	Moisture and Atmospheric Stability	Chapter 04
	19	Tue	Thursday Schedule	
	22	Fri	No Classes Scheduled	
	26	Tue	Moisture and Atmospheric Stability	Chapter 04
	29	Fri	No Classes Scheduled	
Oct	03	Tue	Mid Term Exam I	Chapters 01-04
	06	Fri	Condensation and Precipitation	Chapter 05
	10	Tue	Condensation and Precipitation	Chapter 05
	13	Fri	Air Pressure and Winds	Chapter 06
	17	Tue	Air Pressure and Winds	Chapter 06
	20	Fri	Circulation of the Atmosphere	Chapter 07
	24	Tue	Circulation of the Atmosphere	Chapter 07
	27	Fri	Air Masses	Chapter 08
	31	Tue	Weather Patterns	Chapter 09
Nov	03	Fri	Weather Patterns	Chapter 09
	07	Tue	Mid Term Exam II	Chapters 05-9
	10	Fri	Thunderstorms and Tornados	Chapter 10
	14	Tue	Hurricanes	Chapter 11
	17	Fri	Hurricanes	Chapter 11
	21	Tue	Weather Forecasting	Chapter 12
	24	Fri	College Closed	
	28	Tue	World Climates	Chapter 15
Dec	01	Fri	Air Pollution	Chapter 13
	05	Tue	Climate Change	Chapter 14
	08	Fri	Climate Change	Chapter 14
	12	Tue	Climate Change	Chapter 14
	19	Tue	Final Exam (11:30-1:30)	All Fair Game

COURSE WEBSITE: [HTTP://WWW.GEO.HUNTER.CUNY.EDU/~FBUON/](http://www.geo.hunter.cuny.edu/~fbuon/)