PGEOG 13000 – Weather and Climate Syllabus
4 Credits (Fall 2021)

Lecture Info:
Instructor: Tom Carboni
Section 03
Time: N/A (Asynchronous)

Lab Info:
Instructor: Tom Carboni
Section 3L01
Time: N/A (Asynchronous)

Semester Dates: 8/25/21 – 12/21/21

*This course will fulfill the Common Core Requirement for categories C & D, Life and Physical Sciences and Scientific World. For those under the GER system, this satisfies the 2/E requirement.

My Office: Blackboard Collaborate
Office Hours: Wednesdays 5:00 – 6:00pm ; Email me beforehand to let me know you are attending
E-mail: Thomas.Carboni72@myhunter.cuny.edu

CONTACT POLICY: You may email me with any questions you have regarding the lecture material. I'm here to help but you must make an attempt to solve your own problems first. This means reading the required material and thinking before you send me an email. In your email you must include PGEOG 13000 in the subject line along with your lab section (this lab's section is 3L01) and sign your full name as it appears in CUNYfirst. In addition, be as descriptive as possible with your question, tell me your thought process, and include any relevant diagrams if needed. Furthermore, you MUST use your hunter email when contacting me. You can expect to have your email messages returned within 48 hours. If I do not respond within this time frame, please forward the same email again.

COURSE DESCRIPTION:
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.

Note: Mathematical formulas will be used and calculations will be made in this class. You are expected to have at least a basic understanding of mathematics through algebra and basic trigonometry (the trigonometry is just for one lab).

LEARNING OBJECTIVES AND OUTCOMES:
The student who successfully completes this course can:

1. Explain the scientific method and apply it to solve problems in meteorology and climate studies.
2. Explain and appreciate the interconnected nature of the Earth systems through effective oral and written communication.
3. Identify major geographic features (both physical and human) on map and globe.
4. Discuss the relationship between the Sun and the Earth and the Sun's planetary impact on weather and climate.
5. Recognize the interaction between the elements of the atmosphere, including
   a. the composition and the structure of the atmosphere, and its distribution around the planet, including the basic chemistry and physics of atmospheric processes
   b. the atmospheric and oceanic circulation processes, and
   c. fronts, storm systems and severe weather with an emphasis on North America
6. Discuss methods of weather forecasting and be able to utilize weather forecasting tools and techniques, as well as interpret and create basic weather maps.
7. Recognize and analyze climate processes and how they relate to the past, present and future climate and their impact on biogeography, including
   a. current technology and science in predicting meteorological outcomes
   b. natural and anthropogenic climate change
   c. the impact created by shifts in climate zones

REQUIRED TEXTBOOKS:

Lecture Text: Lutgens, Tarbuck, Herman, Tasa. The Atmosphere: An Introduction to Meteorology, 14th edition. ISBN: 978-0134758589

*The 12th or 13th edition of the lecture text is acceptable. It is ok to rent or buy used. The 13th edition is on reserve in the library. Here is the call number: QC861.2 .L87 2016

Lab Text: Carbone, Greg. Exercises for Weather and Climate, 9th edition. ISBN: 978-0134041360

*The lab text is on reserve in the library (Call Number: QC981 .C34 2016 or try Walter.22.Book). You can photocopy and use this as long as there is no writing in it. Please note that I do not know the condition of this book. If it is missing pages you are still responsible for the work.

*You MUST purchase or use the 9th edition of the Lab Text. You may rent the book as long as you can print the activities. A used book with writing in it is NOT acceptable. Also be wary of missing pages in used editions. Do Not Purchase the Vitalsource/Coursesmart ebook for the lab text. There have been MAJOR formatting problems with it.

I. COURSE EVALUATION AND GRADING:

Assignments	**Weighting**
Two (2) Midterms	18.75% each
Final Exam	25%
Lab Assignments	32.5% total
Pre-Lab Quizzes	5% total

*I do NOT drop any Exam grades

All exams will be composed of a majority of multiple choice questions intermixed with a handful of true or false and/or short answer type questions. Some of these questions will involve graphical / diagram analysis and/or minor calculations. However, you will NOT need a calculator. The first two exams will have around 55 questions while the final will be made up of approximately 65 questions (give or take a few questions for each exam). The **Final Exam will be cumulative**. About 40% of the final exam will be based on the last three chapters and the other 60% will cover everything else we discussed during the semester. In addition, you will be allowed to use your notes for the exams.

Do NOT miss an exam. Make-up exams will NOT be given except under the most extraordinary circumstances such as documented illness, documented death in the family, etc. Make up exams will be given at a mutually convenient time and while they will cover the same chapters as the original exam, there may be more questions and/or practical materials will be different. In addition, there will be no curve (if given to the rest of the class) for those who need make-up exams. If approved for a make-up exam, it MUST be taken with a week of the original exam.

Watching and/or attending the lecture and lab sessions are crucial to succeeding in this class. It will be difficult to fully grasp the concepts if you do not watch the lectures. There may be topics on the exams that I do not include in my notes. Therefore, attendance is vital to achieving a good grade.

A final grade of IN (incomplete) is not normally given in this course except under the most extraordinary and documented circumstances. You must contact me within 48 hours of the scheduled day/time of the final exam and complete a Contract to Resolve an Incomplete Grade.

To qualify for Credit/No Credit you must have completed all laboratory exercises, taken the three exams, and have satisfactory attendance and participation. Credit/No Credit forms will be accepted up to 15 minutes prior to the start time for the final exam. I will not accept a Credit/No Credit slip after the final exam is distributed (so do NOT be late). **Note: This Credit / No Credit Policy may change due to COVID. Updates will be given later in the semester when Hunter announces the final policy.**

If you miss a considerable amount of time in the class and have many missing assignments clustered towards the end of the semester you will be assigned a WU in the course.

The Hunter College grading system, which shows you what the numerical grade equivalents of the letter grades A, A-, B+, etc., are at Hunter College, will be used in this class and can be viewed in the latest undergraduate catalog available online at
http://catalog.hunter.cuny.edu/content.php?catoid=15&navoid=1433

II. TEACHING FORMAT AND POLICIES:
This class will be held in an asynchronous format. This means we will never meet live at an assigned time. The class is not self paced though. You must meet discussed due dates. It is your responsibility to keep up with the work. Please make sure you watch all Lecture and Lab recordings.

III. LABORATORY PREPARATION:
Come to class prepared. Your lab instructors will expect you to have read the laboratory exercise listed for each class ***prior*** to the beginning of that class period. The idea of the pre-lab quiz at the start of lab is to make sure you review the lab beforehand because it will enhance learning during your lab instructor's short lab overview lecture. All the material in lab should first be covered in lecture; however, there may be specific things that differ in the lab. Laboratory exercises can be complex, and if you do not read them before class you will have difficulty turning them in on time. In addition, you **MUST** have all materials for the day's lab printed out and with you or accessible during the labs. If you are unprepared it will count as a half an absence.

IV. LAB DUE DATES AND LATENESS
Lab exercises are due the Sunday night before you begin the next lab (see schedule below). Late lab exercises will have their grade **reduced 10% for each day received late** unless you have a valid excuse that can be documented. This policy will be strictly enforced.

V. EXTRA CREDIT:
No extra credit is given in this course. Whatever effort you would put into an extra credit assignment put into completing the lab exercises and studying for exams. That being said, I will try to be as understanding as I can when certain situations or hardships arise. However, you must address them with me immediately.

VI. HUNTER COLLEGE STATEMENT ON ACADEMIC INTEGRITY: 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. 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.

Remember that copying answers from the internet, an answer key, or someone else is plagiarism. In this class you can work in groups in lab. In fact, I highly encourage this. But you must always record the answers to the labs in your own words. Do not give me or your lab instructors any reason to be suspicious or doubt that you are being honest as I will not tolerate cheating. If you are caught cheating / copying on an exam or lab, you will get an automatic zero on the assignment and possibly fail the course. I will also report you and the suspect incident to the office of the Dean of Students.

VII. ADA POLICY (for students with special accomodations): 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 to secure necessary academic accommodations.

For further information and assistance please call (212-772-4857)/ TTY (212- 650- 3230). **You must be registered with the Office of AccessABILITY to qualify for the accommodations.**

VIII. 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.barr7@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

***Tentative schedule of course topics is listed on the following page**

IX. (TENTATIVE) LECTURE SCHEDULE OF TOPICS AND READINGS:

Week #	Date Starting Week	Topic of Lecture and Corresponding Chapter
1	**8/25**	Syllabus and Ch 1 – Introduction to the Atmosphere
2	**8/30**	Ch 1 – Introduction to the Atmosphere
		Ch 2 – Heating Earth's Surface and Atmosphere
3	**9/6**	Ch 2 – Heating Earth's Surface and Atmosphere
4	**9/13**	Ch 2 – Heating Earth's Surface and Atmosphere
5	**9/20**	Ch 3 - Temperature
		Ch 3 - Temperature
6	**9/27**	Ch 4 – Moisture and Atmospheric Stability
		Ch 4 – Moisture and Atmospheric Stability
7	**10/4**	Ch 5 – Forms of Condensation and Precipitation
		Ch 5 – Forms of Condensation and Precipitation
8	**10/11**	Ch 6 – Air Pressure and Winds
9	**10/18**	**Exam 1 – Ch 1 – 5**
		Ch 6 & Ch 7 – Circulation of the Atmosphere
10	**10/25**	Ch 7 & Ch 8 – Air Masses
		Ch 9 – Mid Latitude Cyclones
11	**11/1**	Ch 9 – Mid Latitude Cyclones
		Ch 10 – Thunderstorms and Tornadoes
12	**11/8**	Ch 10 – Thunderstorms and Tornadoes
		Ch 11 - Hurricanes
13	**11/15**	**Exam 2 – Ch 6 – 11**
		Ch 11 - Hurricanes
14	**11/22**	Ch 15 – World Climates
		Ch 15 – World Climates
15	**11/29**	Ch 15 – World Climates
		Ch 14 – Climate Change
16	**12/6**	Ch 14 – Climate Change
		Ch 13 – Air Pollution
17	**12/13**	**Final Exam Due Wednesday 12/15 by 11:59pm**

Note: Check the academic calendar for other important dates such as withdrawal dates and tuition refund as well as the final exam schedule: http://www.hunter.cuny.edu/onestop/calendars

X. (TENTATIVE) LAB SCHEDULE:

Week #	Start of Week	Lab Number and Topic	Due Date
1	**8/25**		
2	**8/30**	Lab 1 – Vertical Structure of the Atmosphere	**9/19**
3	**9/6**		
4	**9/13**		
5	**9/20**	Lab 2 – Earth-Sun Geometry	**9/26**
6	**9/27**	Lab 3 & 4 – The Surface and Global Energy Budget	**10/3**
7	**10/4**	Lab 5 – Atmospheric Moisture	**10/10**
8	**10/11**	Lab 6 – Saturation and Atmospheric Stability	**10/24**
9	**10/18**		
10	**10/25**	Lab 9 – Weather Map Analysis	**10/31**
11	**11/1**	Lab 10 – Mid-Latitude Cyclones	**11/7**
12	**11/8**	Lab 12 – Thunderstorms and Tornadoes	**11/14**
13	**11/15**	Lab 13 – Hurricanes	**11/21**
14	**11/22**	Lab 14 – Climate Controls	**12/5**
15	**11/29**	Lab 15 – Climate Classification	
16	**12/6**	Lab 16 – Climate Change	**12/12**
17	**12/13**		

Note: Check the academic calendar for other important dates such as withdrawal dates and tuition refund as well as the final exam schedule: http://www.hunter.cuny.edu/onestop/calendars