

Hunter College (CUNY)
Department of Geography and Environmental Science

PGEOG 13000- Weather and Climate Lab Section 2Lo2

Time: Wednesday 7:00 pm - 8:50 pm, 1028HN

Instructor: Tyreik Kelly

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Office Hours: Monday 6:00PM-7:00PM

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** We can schedule a Zoom meeting based on need and availability. Please see me during or after class or send an email with a detailed description of the question or request and we can schedule a date and time to meet. Be sure to write the Lab section in the subject line and include your full name in the body of the email. I will try my best to answer all emails within 24 hours, and within 48 hours on the weekends.

COURSE DESCRIPTION

This is the lab section of the PGEOG 13000 Weather and Climate course, which has a lecture and laboratory component worth 4.0 credits (5 hours). The course fulfills the Hunter Common Core C, Life and Physical Sciences, and the General Education Requirements GER 2/E (Natural Science). There are no prerequisites. The course (lecture and lab) is an introduction to meteorology and atmospheric sciences. It includes the structure and composition of the atmosphere and the elements that affect it, such as pressure, humidity, and temperature. It examines the development of various weather phenomena, such as cloud formation, fronts, storm systems, severe weather, and reviews essential weather forecasting and analysis techniques. The course explores short- and long-term climate processes and their impact on the environment and people. It also demonstrates how different regions of the world have been and will be impacted by climate change in the past, present, and future. This is a laboratory science course, and the concepts covered in the lecture will be demonstrated with hands-on and technology-based activities using a variety of exercises and observations. In several lab exercises, we will be using mathematical formulas, calculations, and graphs. Lab exercises are designed to further your understanding of these concepts through application and analysis.

EXPECTED LEARNING OUTCOMES

Upon successful completion of PGEOG 13000, Weather & Climate Lab, students should be able to:

1. Describe and explain the basic elements that determine everyday weather, severe weather patterns and climatological features across the earth.
2. Explain the relationship between the Sun and the Earth and the Sun's planetary impact on weather and climate.
3. Recognize the interaction between the elements of the atmosphere, including (a) the composition and the structure of the atmosphere; (b) the atmospheric and oceanic circulation processes, fronts, storm systems, and severe weather; (c) interpret methods of weather forecasting and create basic weather maps.
4. Distinguish, analyze, and evaluate 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, and (c) the impact created by shifts in

climate zones.

MATERIALS

- Required Lab Manual: Greg Carbone, Exercises for Weather and Climate, 9th ed. Pearson, 2016 ISBN-10: 0134041364, ISBN-13:9780134041360. Please note that hard copies of the lab exercises will not be provided in class. You must have (purchase/rent/copy) the required materials no later than **February 5, 2025**.
- Optional: Calculator, protractor, pencils, colored pencils, eraser, and paper (for notetaking).

We will be working on lab exercises from the manual in class. You may use a hardcopy or the e-text version. You may write your answers on a separate piece of paper. The e-text is not recommended if you want to print a hardcopy due to alignment and other printing errors. There is also a reserved copy of the manual in the Hunter Library (Call Number: QC981 .C34 2016) if you want to make copies.

CLASSROOM POLICIES

Attendance is taken every class. It is important that you attend every session to work on in-class lab exercises. In addition, there will be a short lecture at the beginning of every session. I encourage you to ask questions and participate in discussions during this time. As a reminder, class participation constitutes 20% of the final lab grade. Please adhere to the following guidelines during class sessions:

- Lecture and class notes should be taken using pen or pencil and paper.
- All cell phones must be silenced.
- Texting and other non-class related smartphone activities are not allowed. Students should quietly excuse themselves from the classroom if substantial external electronic communication is required.
- Tape recording is not permitted (proper documentation must be provided to grant an exception).
- Laptops, iPads, tablets, and other electronic devices may be used **ONLY** for lab assignments during class time.

Please be respectful of yourselves and each other. Inappropriate behavior in our language and/or conduct will not be tolerated. At times we will be working in groups and all students are expected to abide by classroom policies to provide a more productive learning environment.

Preferred Gender Pronoun

All people have the right to be addressed and referred to in accordance with their personal identity. In this class, we will have the chance to indicate the name that we prefer to be called and, if we choose, to identify pronouns with which we would like to be addressed. I will do my best to address and refer to all students accordingly and support classmates in doing so as well."

GRADING RUBRIC (LAB)

Assignments/Participation	% of Final Lab Grade	Description
Lab assignments	80	All assignments completed on Blackboard including Tests and Discussion questions.
Class participation	20	This includes all exercises completed in class as well as individual participation, and group activities.

This is a combined course, including both lecture and lab (**Lecture: Prof. Shenck**). Please see your lecture syllabus for more details. **Your final lab grade is 30% of your final (lecture and lab combined) grade.**

Think of it in terms of points, for example:

30% = 30 points

If you get an 80 as a final lab grade, you multiply that by .30. The result = 24. That means you earned 24/30 points for the lab component.

LAB ASSIGNMENTS

Lab exercises from the manual will be completed in class, individually or in groups and it will be due the following week. Due dates will be posted on Blackboard. **Physical copies of your lab cannot be submitted for a grade, it must be scanned and then uploaded to BlackBoard.** If you need to use a scanner, please use the 3rd floor library. If you miss a class session, you are still expected to complete the assignment and submit it on time. **You will be allowed ONE late lab.** Any late labs thereafter will be subject to a 10 point/day penalty. No labs will be accepted after the last day of class. Exceptions will be made on a case-by-case basis and must be addressed immediately. Please let me know if you have any questions or concerns.

Week No.	Date	Lab Number and Topic	Question Numbers	Due Date	Text Chapter
1	Feb 5	Lab 1a Units and Dimensions	All	Feb 19	
2	Feb 19	Lab 1 Vertical structure of the atmosphere	1-22	Feb 26	1
3	Feb 26	Lab 2: Earth-Sun Geometry	1-6, 9-12, 17	March 6	2
4	March 6 (Follow wednesday schedule)	Lab 3: Surface Energy Budget Lab 4: Global Energy Budget	Lab #3: 1-4, 11-15 Lab #4: 1-5, 11-15	March 12	2,3
5	March 12	Lab 5: Atmospheric Moisture	10-29	March 19	4
6	March 19	Lab 6 - Saturation and Atmospheric Stability	1-16, 18-25	March 26	4
7	March 26	Lab 9 - Weather Map Analysis	1-3, 5, 8-9	April 2	8,9
8	April 2	Lab 10 - Mid-latitude Cyclones	1-17	April 9	9
9	April 9	Lab 12 - Thunderstorms and Tornadoes	1-17	April 23	10
10	April 23	Lab 13 – Hurricanes	1-17	April 30	11
11	April 30	Lab 14 - Climate Controls	1-22	May 7	15

12	May 7	Lab 16 – Climate Variability and Change	1-23	May 14	14
13	May 14	Lab 17 - Simulating Climate Change	1-16	May 21	14

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.

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.

HUNTER COLLEGE POLICY ON SEXUAL MISCONDUCT

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College reaffirms 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 relationships. 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, or 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) or 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. [Sexual-Misconduct-Policy.pdf \(cuny.edu\)](#)