

GEOG 1900 (Twisters & Tempests: Extreme Weather and Climate)

Autumn 2026

Course Syllabus

Instructor:

Dr. Christopher Hartman

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Office: Derby Hall 1140

Office hours: Mon/Wed/Fri from 2 to 3 PM, or by appointment

Teaching Assistant:

Brian Rakoczy

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Office: Derby Hall 1131

Office Hours: Mon/Wed from 1 to 2 PM, or by appointment

Meeting Times/Locations:

<i>Lecture (Everyone)</i>	
Mon/Wed/Fri 9:10 – 10:05 AM in Fontana Lab 1000	
<i>Labs</i>	
Section 0020	Section 0030
Mon/Wed 10:20 – 11:15 AM in Derby Hall 0070	Mon/Wed 11:30 AM– 12:25 PM in Derby Hall 0070
* * No labs first week of semester **	

Course Materials:

Website: The Carmen course management system <http://carmen.osu.edu>

Optional Textbook: Understanding Weather and Climate, 7th Edition (2015), Aguado & Burt, ISBN-13: 978-0-321-98730-3, Pearson.

Course Description:

This course will serve as an introduction to the study of the atmosphere. The primary objective is to provide students with a comprehensive understanding of the atmosphere and the processes that govern its behavior. In this course students will be exposed to various aspects of meteorology, including the structure and behavior of the atmosphere, global energy balance and transfer, atmospheric circulation, precipitation processes, weather systems, and severe weather (e.g., hurricanes, tornadoes). This course will emphasize the inter-relationship existing between the atmosphere, hydrosphere, biosphere and lithosphere and will illustrate how the movement of matter and energy between these spheres is responsible for the weather, climate and environments we experience on Earth.

Grading Scale:

Numerical Final Course Grade	Letter Final Course Grade
92.5 – 100	A
89.5 – 92.4	A-
86.5 – 89.4	B+
82.5 – 86.4	B
79.5 – 82.4	B-
76.5 – 79.4	C+
72.5 – 76.4	C
69.5 – 72.4	C-
66.5 – 69.4	D+
59.5 – 66.4	D
Below 59.5	E

Student Evaluation:

Your final grade will be calculated as a weighted average of the following four categories:

Category	Weight
TopHat In-Class Participation	20%
Labs (10 total)	30%
Exam #1 (in class on Wed, Oct. 14)	25%
Exam #2 (in class on Wed, Dec. 9)	25%

TopHat In-Class Participation (20%)

Most lectures will have TopHat multiple choice and/or True/False questions sprinkled throughout them to review/reinforce concepts as well as make the lectures more interactive. You do not need to get these questions correct to get full credit for them – simply submitting an answer for each question will give you full credit.

Labs (30%)

Laboratory exercises will be conducted during recitations. Attendance is required. Students should read through each lab (they will be posted on Carmen) and be prepared PRIOR to the lab session. It is the responsibility of each student to turn in the required laboratory exercise at the beginning of the lab class on the due date. All lab exercises must be completed INDIVIDUALLY, although working in groups is encouraged. Teaching Assistants are the ones responsible for the Labs. While the instructor will be happy to help with lab questions, the TA might grade things differently depending on what took place during a particular lab. It is always safer to settle lab doubts with your TA. Students should also approach the TA when it comes to arrangements on late or missed labs.

Exams (50%)

- In class using Carmen with LockDown Browser - install on the device you plan to use via <https://teaching.resources.osu.edu/toolsets/carmencanvas/guides/respondus-lockdown-browser-students>
- Open-book/open-notes – can only use hard copies of resources.
- Exam #1 - Wednesday, October 14 (25% of course grade)
- Exam #2 - Wednesday, December 9 (25% of course grade)
- Exam #2 focuses on 2nd half of semester (important concepts from 1st half of semester which will appear on exam #2 will be clearly communicated to class via study guide)
- Same format each time – 35 multiple choice + 15 true/false questions
- Make-up exams are only allowed in the case of university-sanctioned absences, a documented emergency, or through PRIOR consent of the instructor.

Extra Credit

You will have the opportunity to have up to 3% added to your final course grade by making cloud observations and submitting them to the “Student Cloud Observations Online (S’COOL)” project. This is a NASA-led citizen science initiative aimed at collecting cloud data to improve satellite-based observations. The S’COOL project is now part of the Global Learning and Observations to Benefit the Environment (GLOBE) project (www.globe.gov). More details about this extra credit opportunity will be announced once we cover the chapter on clouds.

University Policies:

- [Academic Misconduct](#)
- [Religious Accommodations](#)
- [Accommodations for Disability and Illness](#)
- [Intellectual Diversity](#)
- [Grievances and Solving Problems](#)
- [Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct](#)
- [Copyrights](#)
- [Content Warnings](#)
- [Mental Health Support](#)
- [Resources for Military-Connected Students](#)
- [Campus-wide Class Cancellations](#)

List of Topics:

Note: A tentative schedule for the class has been posted on Carmen

<u>Lecture Topic</u>	<u>Chapter from Augado & Burt (2015)</u>
Composition & Structure of the Atmosphere	Chapter 1
Solar Radiation & the Seasons	Chapter 2
Energy Balance & Temperature	Chapter 3
Atmospheric Pressure & Wind	Chapter 4
Atmospheric Moisture	Chapter 5
Cloud Development & Forms	Chapter 6
Precipitation Processes	Chapter 7
Atmospheric Circulation & Pressure Distributions	Chapter 8
Air Masses & Fronts	Chapter 9
Midlatitude Cyclones	Chapter 10
Lightning, Thunder, & Tornadoes	Chapter 11
Tropical Storms & Hurricanes	Chapter 12
Climate & Climate Change	Chapter 16
Human Effects on the Atmosphere	Chapter 14