EVSC 1300: Earth's Weather and Climate (3 credits)
Spring 2019
Clark Hall Room 108
MWF 1:00 p.m. – 1:50 p.m.

Instructor

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Office Hours

TBD, or by appointment

Course Description

If you're fascinated by nor'easters, tornadoes, and hurricanes, simply want to know why it rains some days and is sunny on others, or want to better understand all the news headlines about climate change, this is the class for you! This class is intended for non-science majors, so previous background knowledge or experience is not required. Upon completion of this course, you will be able to identify and understand a variety of atmospheric phenomena that influence weather and climate.

Questions to be answered this semester will include:

- What is the greenhouse effect?
- Why is it typically warmer on a cloudy night but cooler on a cloudy day?
- How do clouds and precipitation form?
- How and why do nor'easters, hurricanes, and tornadoes develop?

A detailed course outline is provided under the Schedule tab on the course Collab website. Please check the outline regularly as it will be updated throughout the semester with readings and lecture slides.

How to Succeed in This Class

1) Come to class! All the material on the exams will be based on material covered in lecture, some of which is not in the textbook.
2) Ask questions in class, in office hours, or via email about anything confusing to you.
3) If you're missing the extra credit questions, it's a good sign that you may need to seek out help before the exam.
4) Sign-up for a study group.

Required Textbook

Meteorology Today: An Introduction to Weather, Climate, and the Environment, 11th Edition, by C. Donald Ahrens and Robert Henson, Brooks/Cole, 2016

- You can use the 10th or 12th editions of this book if you prefer!

Assessment and Evaluation

Grades for the course will be based on four in-class exams and in-class extra credit questions:

Exam 1: Wednesday February 6
Exam 2: Wednesday March 6
Exam 3: Wednesday April 10
Exam 4: Monday April 29

Exams: Four exams will be held during regular class periods on the dates listed above. Each exam will consist of multiple choice or short answer questions. The exams will not be cumulative (i.e., the fourth exam will **not** be a cumulative final, and will be held on the last day of class). The exam questions will be based almost entirely on material presented and discussed **in class**. If students have an officially sanctioned university conflict (academic or athletic activity), they will need to discuss alternative arrangements with the course instructor as soon as possible. Students who miss exams without prior approval of the instructor will receive a zero on the exam.

IMPORTANT: I will drop your lowest exam score!! The remaining three exam scores will each count for one third (33.33%) of your final course grade. If you are satisfied with your first three exam scores, you do not need to take the fourth exam!

Extra Credit Questions: It can often be intimidating in large classes to raise your hand to ask a question or to clarify something that seems confusing. To help you assess your own understanding of the concepts discussed in class, we will be using the online classroom response system, *Learning Catalytics*, to answer questions during class. Answering these questions is not required, but will provide you with a significant opportunity for extra credit toward your final course grade.

To use *Learning Catalytics*, you need to do two things: 1) bring a fully charged web-enabled device (laptop, smartphone, or tablet) to every class, and 2) **sign up on the *Learning Catalytics* website** (https://learningcatalytics.com/) **($12 for the semester)**. If you do not have regular access to a web-enabled device in class, please talk with me, and alternative arrangements can be made.

Extra credit points will be assigned as follows:

- If you answer 90%–100% of the extra credit questions for the semester, I will add 3 additional points to your end-of-semester course grade.
- If you answer 80%–90% of the extra credit questions for the semester, I will add 2 additional points to your end-of-semester course grade.
- If you answer 70%–80% of the extra credit questions for the semester, I will add 1 additional point to your end-of-semester course grade.

There will be no penalty for incorrect answers on the extra credit questions. However, students who systematically enter blatantly incorrect answers will receive one warning. A subsequent offense will result in the forfeiture of all extra credit points earned for the semester.

Grading Scale

The final grade will be based on the following grading scale:

A+: 98-100	A: 93-97	A-: 90-92
B+: 87-89	B: 83-86	B-: 80-82
C+: 77-79	C: 73-76	C-: 70-72
D+: 67-69	D: 63-66	D-: 60-62

F: Less than 60

Technology Policy

To use *Learning Catalytics*, you'll need to bring a fully charged web-enabled device (laptop, smartphone, or tablet) to every class. If you prefer to take notes on paper, I would recommend you sit toward the front of the classroom, and use your electronic device only for the *Learning Catalytics* activities. If you prefer to take notes on your laptop or tablet, I would recommend you sit toward the back of the room, to allow a screen-free environment for those wishing to take notes on paper.

Please use your electronic devices judiciously, as a courtesy to others in the classroom. If you are distracting other students by using an electronic device for non-class-related purposes, you will be asked to leave class. Use of electronic devices during exams is **not** permitted, and students seen using these devices during an exam will receive an automatic zero.

Questions??

Class participation and asking questions in class is strongly encouraged.

Questions outside of class can be addressed to the instructor via email, or in person during office hours. Please schedule an appointment to meet with the instructor outside of office hours.

Preliminary Course Outline

This course outline is very tentative. The most up-to-date outline can be found on the course's Collab site under the Schedule tab.

1/14, 1/16, 1/18	Introduction Observations of Earth's Weather and Climate
1/21	NO CLASS (HOLIDAY)
1/23, 1/25	Atmospheric Composition and Air Pollution
1/28, 1/30, 2/1	Greenhouse Effect and Atmospheric Radiation
2/4	Exam Review
2/6	EXAM #1
2/8, 2/11	Earth's Seasons Seasonal and Daily Cycles of Temperature
2/13, 2/15	Atmospheric Moisture and Humidity
2/18, 2/20, 2/22	Clouds
2/25	Precipitation
2/27, 3/1	Severe Weather (Thunderstorms, Lightning, and Tornadoes)
3/4	Exam Review
3/6	EXAM #2
3/8	Optical Phenomena (Rainbows, etc.)
3/11, 3/13, 3/15	NO CLASS (SPRING BREAK)
3/18, 3/20, 3/22	Local Wind Systems (Monsoons, Sea Breezes, and Mountain Winds)
3/25, 3/27	Extratropical Winds (Jet Streams, Surface High- and Low-Pressure Systems)
3/29, 4/1, 4/3	Midlatitude Weather Systems (Air Masses, Fronts, Nor'easters)

4/5	Weather Forecasting
4/8	Exam Review
4/10	EXAM #3
4/12	Tropical Winds (Hadley Circulation and El Niño)
4/15, 4/17	Hurricanes
4/19	Antarctic Ozone Hole
4/22, 4/24	Global Climate Change
4/26	Exam Review
4/29	EXAM #4