

INTRODUCTION TO METEOROLOGY

ATMS 103.002

FALL 2017

The science of meteorology explores the ever-changing atmosphere that affects all of our lives, from the mundane choice of what to wear to the devastating impacts of tornadoes and hurricanes. Over the next few months, you will develop an appreciation for the beauty and complexity displayed by the atmosphere every day. We'll begin by learning about the physical processes that govern our atmosphere, laying the groundwork necessary for a few death-and-destruction topics later in the semester. Before the year is out, you will be able to locate and interpret your own sources of weather information and not only understand the meteorologists on television, but explain to your friends and family the scientific principles behind current weather events. Ask lots of questions and enjoy!



PROFESSOR

Dr. Christopher Godfrey

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Office hours: 2:45 p.m. to 3:45 p.m. on Tuesdays and Thursdays, or by appointment. If my door is open at any other time, please drop in.

CLASS INFORMATION

Meeting times: TR 1:20–2:35 p.m.

Location: Robinson Hall, room 239

Required text: Ahrens, C. D., 2012: *Essentials of Meteorology*. 6th ed. Cengage Learning, 506 pp. (ISBN-13: 978-0-8400-4933-9). Older or newer editions are acceptable, but the page numbers may differ from those listed here.

Website: <http://www.atms.unca.edu/cgodfrey/courses/atms103/>

- » Class will start and end on time. Please arrive on time and stay for the entire class.
- » This course satisfies the scientific perspectives requirement within the Liberal Arts Core.
- » Please visit <http://www.atms.unca.edu/slos.shtml> for a list of the student learning outcomes for the Department of Atmospheric Sciences.

GETTING QUESTIONS ANSWERED

I will be in my office during scheduled office hours, but if at any other time you have a question and my office door is open, you are more than welcome to visit. Otherwise, e-mail is by far the best way to reach me and you will usually get a speedy reply. You may also schedule an appointment with me. Please don't hesitate to ask questions about class, other coursework, or the stresses of college life whenever the need arises.

PREREQUISITES

There are no prerequisites for this course, but I will present a few simple equations that you should be able to manipulate using techniques learned in your high school algebra class. Please see me if this sounds scary and we'll go from there.

IMPORTANT DATES

Tuesday, 26 September 2017	Exam I	In class
Thursday, 26 October 2017	Exam II	In class
Thursday, 7 December 2017	Final Exam*	11:30 – 2:00 p.m.

*Graduating seniors may not take the exam at an earlier date or time.

COURSE SCHEDULE

With the exception of examination dates, this course schedule is approximate and subject to modifications.

Date	Topic	Reading	Homework
22 August	Geography, Describing the atmosphere	Chapter 1	Memorize U.S. States
24 August	Describing the atmosphere (States quiz)	Chapter 1	#1 Assigned
29 August	Energy	Chapter 2	
31 August	Radiation, Earth's energy budget	Chapter 2	
5 September	Greenhouse effect, Seasons	Chapter 2	#1 Due
7 September	Water vapor in the atmosphere	Chapter 4	#2 Assigned
12 September	Water vapor, Observations	Ch. 4, pp. 247–50, 461–2	
14 September	Atmospheric motion	Chapter 6	
19 September	Atmospheric motion	Chapter 6	#2 Due
21 September	Pressure systems, Radar	pp. 143–145, 306–308	#3 Assigned
26 September	Exam I		
28 September	Radar, Satellites	pp. 250–253	
3 October	Stability	pp. 116–127	#3 Due
5 October	Air masses	Chapter 8	#4 Assigned
10 October	Fall Break–No class		
12 October	Fronts	Chapter 8	
17 October	Fronts	Chapter 8	
19 October	Mid-latitude cyclones	Chapter 8	#4 Due
24 October	Thunderstorms	pp. 178–179, 272–281	
26 October	Exam II		
31 October	Mesoscale complexes, Supercells	pp. 281–286	
2 November	Watches, warnings, and advisories; SPC	pp. 246–248, 300	
7 November	Lightning, Hail	pp. 290–295, 140–143	#5 Assigned
9 November	Tornadoes	pp. 295–306	
14 November	Tornadoes	pp. 295–306	
16 November	General circulation, El Niño	pp. 193–210	
21 November	Hurricanes	Chapter 11	#5 Due
23 November	Thanksgiving–No class		
28 November	Hurricanes	Chapter 11	
30 November	Climate and climate change	Chapters 12 and 13	
7 December	Final Exam	11:30 – 2:00 p.m.	

EVALUATION

There will be two preliminary exams and a comprehensive final exam to assess your progress through the semester. The preliminary exams will take place during regular class meeting times. Five problem sets will strengthen your skills and reinforce the lecture material and will be due in class on the dates indicated above. Five to ten unannounced quizzes will be given during the class period at irregular intervals throughout the semester. Though attendance is not explicitly required, these quizzes will serve as a measure of attendance and will also provide you and me with some feedback. Since life happens, I will drop the lowest two quiz grades.

There will be no opportunities for make-up quizzes or exams. Exams must be taken on the scheduled date. If you miss the class, you miss the grade. The *only* exceptions to this rule are: (1) serious medical condition (illness or injury) of you or an immediate family member; (2) University excused absence; (3) jury duty; or (4) military orders. Only in such instances will an exam or another quiz be dropped or rescheduled depending on your best interests, but

only if I am notified at least 24 hours in advance. Except under the circumstances described above, **homework is due 45 minutes after the end of class** on the date listed in the syllabus. This should allow you to run home and get your completed assignment if you forgot it! I will accept homework up to 24 hours late (3:20 p.m. the following day) for a 50% late penalty. *Homework more than 24 hours late will not be graded.* In the event of an unforeseen circumstance that causes you to miss an exam, quiz, or homework due date, *you must notify me by phone or e-mail within 24 hours of the event.* Appropriate documentation must accompany any excused absence from an exam or quiz and should be attached to a late homework assignment.

GRADING

Preliminary Exams	30%	
Quizzes	20%	Lowest two grades dropped
Homework Assignments	35%	
Final Exam	15%	

I reserve the option to curve the final grades upward at my discretion. However, you are guaranteed *at least* the following based on your final score before applying any curve:

A	≥92.0%	C	72.0–77.9%
A-	90.0–91.9%	C-	70.0–71.9%
B+	88.0–89.9%	D+	68.0–69.9%
B	82.0–87.9%	D	60.0–67.9%
B-	80.0–81.9%	F	<60.0
C+	78.0–79.9%		

Final grades are not negotiable. If you see a problem with a quiz, exam, or homework grade, you may plead your case no later than 14 days from the date I return the assignment to the class. I do make mistakes. Under no circumstances will your grade be *lower* if you see me with a question.

ACADEMIC INTEGRITY

Since the point of this or any class is to learn, you may collaborate on homework assignments, but *you absolutely must make sure that you hand in your own work and that you understand the material.* Copying your friend's answers will not only be obvious to me, but will result in both of you sharing the credit for that answer. For example, if you do a fantastic job on the homework assignment and then let three of your friends copy *any part of it*, you will each receive a maximum grade of 25% for the assignment. Any collaboration on exams and quizzes is simply cheating. I have zero tolerance for academic misconduct and will deal with the problem by immediately filing charges through the regular University channels.

NOTES

University of North Carolina at Asheville is committed to making courses, programs and activities accessible to persons with documented disabilities. Students requesting accommodations and/or academic adjustments must do so through the Office of Academic Accessibility and may be required to provide supporting documentation. All information provided will remain confidential. For more information, please contact the Office of Academic Accessibility at (828) 232-5050 or academicaccess@unca.edu or visit them in the OneStop Student Services Center.