

INTRODUCTION TO METEOROLOGY

ATMS 103.002

Spring 2024

Course Description: We will look at the structure of the atmosphere, parameters that control weather, the jetstream, large-scale pressure systems, as well as an array of severe weather phenomena including hurricanes, tornadoes, and thunderstorms. By the end of this course, you will be able to understand why the weather changes as it does and draw connections between severe weather and its impacts on people's daily lives.

Class Meetings: TR 1:20–2:35 p.m. in RRO 239
Credit hours: 3

GENERAL INFORMATION

Suggested Text: Ahrens, C. D., and R. Henson, 2017: *Essentials of Meteorology: An Invitation to the Atmosphere*. 8th ed. Cengage Learning, ISBN-13: 978-1305628458. Older editions of the text are acceptable, but the page numbers may differ from those that I reference.

Webpage: The course webpage (Moodle) is referenced throughout the course and students are encouraged to access it regularly. Lecture slides, announcements, assignments, and sources of additional information will be made available on a regular basis.

This course satisfies the scientific perspectives requirement within the Liberal Arts Core (LAC). When combined with ATMS 111, this course satisfies the laboratory science requirement within the LAC. Visit <http://www.atms.unca.edu/slos.shtml> for a list of the student learning outcomes for the Department of Atmospheric Sciences.

ASSIGNMENTS

In-Class Exercises: Throughout the semester active-learning exercises will be completed during class meetings. There are likely to be about 20–30 class exercises during the semester; however, we may have more or less than this. At least 80% of all class exercises are required to be completed during class and submitted on Moodle prior to the next class meeting to receive the 10% of credit towards your final grade. **If fewer than 80% are completed, no credit will be given for this portion of your final semester grade.** Class exercises should be submitted via a photo on Moodle and will not be accepted for credit after the next class period for which they are completed.

Homework: Homework sets will be assigned throughout the semester. These questions will be related to material discussed in class but may require you to solve a problem not directly addressed in class. We may also use class time to start analyses that will be referenced or continued in homework assignments. You are encouraged to work with other students on homework, but all

Professor

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work should be your own and be written in your own words. Partial credit will be given, but all steps to the solution must be shown.

Quizzes: Throughout the semester, quizzes will be given at the end of each new section of material. Quizzes are given to ensure that you are keeping up with course material and allow you to assess how well you are understanding course concepts before you may encounter them on an exam. Your lowest two quiz grades will be dropped.

Exams: Three exams will be given in this course. The first and second exams will be given during class time and will primarily cover new topics since the beginning of the semester or since the first exam. The third exam will cover topics presented in the last third of the course and will be given during the final exam period. Topics in this course do build upon each other, therefore, reviewing course material throughout the semester will be beneficial to you in this course. You are required to take the exams during the scheduled time unless other accommodations (i.e., University sponsored events, religious observances) have been cleared through me at least 72 hours before the exam. **No make-up exams will be given.**

Course Work	% of Grade
Quizzes	15%
Homework	30%
In-Class Exercises	10%
Exam #1	15%
Exam #2	15%
Exam #3	15%

A	92–100	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		

EXPECTATIONS/ COURSE POLICIES

Late Work: I will accept homework after the due date with a 10% per day late penalty. No exams or quizzes will be given after the day they have been assigned in class (unless arrangements have been made with me). You will be allowed one 48-hour extension (i.e., life token) on one outside of class assignment (i.e., not a quiz or exam) for no penalty. You must clear this extension with me no less than 24-hours before the due date.

Academic Honesty: Any act of plagiarism, cheating, or use of unauthorized material or assistance is academic dishonesty. A person who knowingly assists another in cheating is likewise guilty of cheating. It is up to my assessment of the gravity of the offense, that a student may be punished by a failing grade or a grade of zero for the assignment or test, or a failing grade in the course. I expect that you will exercise integrity in all quizzes, exams, and written assignments. Please email me or come in during office hours if you have additional questions or need clarification on any point.

Attendance: There is no attendance policy for this course, but your success in this course is undoubtedly tied to attending lectures regularly, submitting in-class exercises (worth 10% of your final grade), and keeping up with course content. Please come to class on time as each class will start and end on time. If you need to arrive late, be respectful of others when you enter the classroom

and find a seat. If you must leave early, please let me know before class and leave as quietly as possible so as not to disturb the class.

Technology Use/ Artificial Intelligence Tools Policy: You may use laptops or tablets during class to take notes, but you may not use them for watching TV, doing work for other classes, or anything else not related to course discussion. I reserve the right to change this policy should distractions become an issue. If you have accommodations through the Office of Academic Accessibility (accessibility.unca.edu) for electronics use during class, please come talk to me. Students are not allowed to use advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT) on assignments in this course. To do so violates academic integrity. By submitting assignments in this class, you pledge to affirm that they are your own work.

Communication: I will primarily contact you about course information through email or our course website (Moodle) so please get in the habit of checking both every day! Therefore, email is also the best way to reach me with any questions/comments/concerns (ccrosset@unca.edu). I will monitor email from 8a.m.–5p.m. during the work week and intermittently outside of these hours and during the weekend. Please allow me 24 hours to reply to your email and please make sure you've consulted the syllabus and our course website (Moodle) before asking a question whose answer might be on either.

Respectful Classroom Environment: It is expected that you will be respectful of other students, the instructor, and any guest presenters while in class. Just as you expect others to actively listen to your diverse set of thoughts and perspectives, I ask that you do the same. Any disrespectful or disruptive behavior will not be tolerated, and you will be asked to leave class. If something is shared in class (by anyone, including myself) that makes you feel uncomfortable, please let me know.

UNIVERSITY RESOURCES

Accessibility: UNC-Asheville values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/conditions may require accommodations due to barriers in the structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to this class should let the professor know, and/or make an appointment to meet with the Office of Academic Accessibility as soon as possible. To make an appointment, call 828.232.5050 or email academicaccess@unca.edu. Learn more about the process of registering, and the services available through the Office of Academic Accessibility here: accessibility.unca.edu

Mental Health Support: As a student, you may experience a range of challenges that can interfere with learning, such as stressful life events, experiences of anxiety and/or depression, self-harm, substance use, and/or unusual difficulty with ordinary life activities. The increased stress of school can also make existing mental health struggles more difficult to manage. Support is available and treatment can help. Learn more about the confidential mental health services UNC Asheville provides to support student success at <https://www.unca.edu/life/health-counseling/>. The Health and Counseling Center is located at 118 W.T. Weaver Boulevard. Appointments can be made by calling 828-251-6520. A UNC Asheville counselor on call is available after 5 p.m. and on weekends; the counselor on call can be accessed by calling the UNCA Campus Police dispatcher at 828-251-6710. Additionally available after hours and on weekends, call the Bulldog Health Link at 1-888-267-

3675, where you can get immediate support for mental health, medical consultation, concern for a friend, and/or community resources. In case of an emergency, you can also call RHA's Mental Health Mobile Crisis Unit at 1-888-573-1006.

COURSE SCHEDULE (subject to change) – ATMS 103 – Spring 2024

Week	Date	Topic	Reading	Assignment
1	16-Jan	Introduction/ The Earth's Atmosphere		
	18-Jan	The Earth's Atmosphere	Chapter 1	
2	23-Jan	Warming the Earth and Atmosphere	Chapter 2	Quiz
	25-Jan	Warming the Earth and Atmosphere/ Air Temperature	Chapter 3	
3	30-Jan	Prof. Crossett at AMS Conference - NO Class		Watch Lecture; Post Discussion Question; Quiz (on Moodle)
	1-Feb	Prof. Crossett at AMS Conference - NO Class	Chapter 4	Watch Lecture; Post Discussion Question; HW1 (submit on Moodle)
4	6-Feb	Humidity, Condensation, and Clouds		
	8-Feb	Humidity, Condensation, and Clouds		Quiz
5	13-Feb	Cloud Development and Precipitation	Chapter 5	
	15-Feb	Review Session		HW2
6	20-Feb	Exam 1: Chapters 1-4		
	22-Feb	Cloud Development and Precipitation		
7	27-Feb	Cloud Development and Precipitation		Quiz
	29-Feb	Air Pressure and Winds	Chapter 6	
8	5-Mar	Air Pressure and Winds		
	7-Mar	Air Pressure and Winds/ Atmospheric Circulations	Chapter 7	Quiz
9	12-Mar	Spring Break - NO Class		
	14-Mar	Spring Break - NO Class		
10	19-Mar	Atmospheric Circulations		HW3
	21-Mar	Air Masses, Fronts, and Mid-Latitude Cyclones		Quiz
11	26-Mar	Review Session		
	28-Mar	Exam 2: Chapters 5-7		
12	2-Apr	Air Masses, Fronts, and Mid-Latitude Cyclones	Chapter 8	
	4-Apr	Air Masses, Fronts, and Mid-Latitude Cyclones		
13	9-Apr	Thunderstorms and Tornadoes	Chapter 10	Quiz
	11-Apr	Thunderstorms and Tornadoes		
14	16-Apr	Thunderstorms and Tornadoes		
	18-Apr	Hurricanes	Chapter 11	Quiz
15	23-Apr	Undergraduate Research Symposium - NO Class		
	25-Apr	Hurricanes		Quiz; HW4
16	30-Apr	Review Session		
Thursday	2-May	Exam 3: Chapters 8, 10, 11: 11:30a.m. - 2p.m.		