ATMS 420 - Spring 2022

Applied Climatology

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Course Description: Application of climatological and statistical principles to weather-sensitive fields such as agriculture, construction, transportation, and energy conservation.

Prerequisite: ATMS 405

Credit Hours: 3

Class Meetings: MW – 3:30 to 4:45 a.m. – 217 Rhoades Robinson Hall

Online Course Site: classroom.google.com, Class Code: u3l5sn4

Required Texts

Assigned readings will be posted to Google Classroom or sent via email.

Covid Health Requirements: In-person instruction during this active pandemic is inherently risky, though the university has created policies to mitigate some of those risks. See https://coronavirus.unca.edu/ for details paying close attention to Community Expectations (https://coronavirus.unca.edu/return-to-campus/community-expectations/). Note that while the university uses positive framing to describe our policy, these *expectations* are, in fact, *requirements*. At a minimum, you must adhere to the following protective measures.

- Everyone must wear an appropriate mask at all times in public spaces. Note that not all masks provide equal protection. By "appropriate" I mean either a KN95 mask or a cloth mask worn over a surgical mask (i.e., double-masking). To work properly, masks must fit closely over your mouth and nose.
- Everyone will maintain impeccable personal hygiene including coughing/sneezing into your elbow (even when wearing a mask) and following CDC standards for hand-washing.
- No one will come to class with Covid-like symptoms.
- No one will come to class if they were in close contact with someone infected - or suspected to be infected - with the SARS-CoV-2 virus.

- Covid-related absences will be excused, but prompt notice is required.
- The university has asked for consistent seating during class meetings to aid in contact tracing. You are expected to sit in the same seat all semester.

These requirements are subject to change as we continue to learn more about Covid-19 transmission and breakthrough infections. I reserve the right to require measures that are more strict than those implemented by the university.

Assignments

1. Homework (75%): There will be several homework assignments throughout the semester. You are allowed to work together on these, but the work you turn in to me must be your own. Problem sets are due at the beginning of class on the days indicated in the **Course Calendar** section below. Late problem sets turned in up to 24 hours after the due date/time will incur a 25% penalty; I might not accept work more than 24 hours overdue.

2. Climate Report Project(25%): You will create a five-page report for a U.S. city detailing 20th century climate trends, more recent 21st century changes, and future climate projections. You will also present your report to the class as a poster presentation.

Grading Policy

		B+	88-89	C+	78-79	D+	68-69	F	<60
A	92-100	B	82-87	C	72-77	D	62-67		
A-	90-91	B-	80-81	C-	70-71	D-	60-61		

Attendance: Attendance and active class participation are expected. Students are responsible for any and all class information whether or not they were present when the information was provided. Active engagement during this type of class is critical.

Course Calendar

Week 1

Jan 10 first day stuff (virtual)

Jan 12

Week 2

Jan 17 NO CLASS - MLK Day

Jan 19 Google's Colab notebooks

Week 3

Jan 24	reading csv files
Jan 26	numpy arrays

Week 4

Jan 31	Time series
Feb 2	Time series

Week 5

Feb 7	Scatter plots
Feb 9	Scatter plots

Week 6

Feb 14	Bar graphs
Feb 16	histograms

Week 7

Feb 21	box plots
Feb 23	box plots

Week 8

Feb 28	text, annotate, lines, spans
Mar 2	twin x, split x axis

Week 9

Mar 7	NO CLASS - Spring Break
Mar 9	NO CLASS - Spring Break

Week 10

Mar 14	regression lines
Mar 16	

Week 11

Mar 21	wind barbs, polar plots
Mar 23	polar plots

Week 12

Mar 28	maps
Mar 30	maps

Week 13

Apr 4	maps
Apr 6	maps

Week 14

Apr 11	NO CLASS - work on project
Apr 13	NO CLASS - work on project

Week 15

Apr 18	NO CLASS - work on project
Apr 20	poster design

Week 16

Apr 25	presentations

Final Exam	**Friday, Apr 29, 3:00-5:30 p.m.**

Student Learning Outcomes: UNC Asheville and the Department of Atmospheric Sciences have developed a number of learning outcomes, or ideas and abilities that we believe you should have when you leave here. This course addresses several of these outcomes, which can be accessed on our department website at http://www.atms.unca.edu/slos.shtml.

Accommodations for Students with Disabilities: 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, visit them in the OneStop Student Services Center or at their website https://oaa.unca.edu/.

University Academic Policies and Procedures: Students are expected to abide by UNC Asheville academic policies and procedures, especially those regarding academic honesty and in-class behavior. They can be summarized as don't cheat and come to learn. See http://catalog.unca.edu/ for the exact wording of the policy.