



North Carolina Agricultural and Technical State University

College of Science & Technology

Applied Science & Technology PhD Program

Weather and Climate Studies

Course Syllabus

Course Information

<i>Course Number/Section:</i>	<i>ASME 234-05B</i>
<i>Term:</i>	<i>Spring 2020</i>
<i>Semester Credit Hours:</i>	<i>3</i>
<i>Times and Days:</i>	<i>Anytime, anyday</i>
<i>Class Location:</i>	<i>Wherever there is internet</i>

Instructor Contact Information

<i>Instructor</i>	<i>Dr. Yuh-Lang Lin</i>
<i>Office Location</i>	<i>302H Gibbs Hall</i>
<i>Office Phone</i>	<i>336-285-2127</i>
<i>Email Address</i>	<i>ylin@ncat.edu</i>

Student Hours: By appointment

Note: Students are responsible for reading, understanding, and following their syllabi.

Course Pre-requisites: No prerequisites

Course Description

This course introduces students to scientific inquiry and the scientific method through a study of the principles of meteorology and climatology. It covers the basics of climate extremes, climate change and global warming, and atmospheric circulations along with the role of oceans in the climate system. The course will address common misconceptions in weather and climate, natural and anthropogenic climate change that we often encounter in the media and private conversations. It will assess climate change and public policy issues. The course aims to include historical case studies such as the impact of weather extremes on famous war battles, movement of communities and settlements. The course will also introduce GIS tools for mapping weather and climate anomalies, major historical wars and community movements.

- Distinguish weather information from climate information,
- Critical thinking and analysis of weather and climate issues,
- Know the different components of the Climate system,
- Understand the differences or similarities of natural and anthropogenic climate change and global warming,
- Understand the potential causes of global warming and have a greater appreciation of the importance of climate science in our everyday lives and its role in influencing policy decision-making,
- Learn major weather systems and circulation patterns and form a basic understanding of the mechanisms of the atmospheric system,
- Learn about the national and international responses of climate change.

Class motto: “*Weather and Climate affect everything and everyone in different ways.*”

“*Weather is what you get, climate is what you expect!*”

Important questions:

- “How do different components of the climate system work together to effect changes?”

- “How does the changing climate affect our life styles? Should we be concerned?”

Required Textbooks and Materials

Required Text and Manual

“**Climate Studies: Introduction to Climate Science**” by **Chad M. Kauffman**. American Meteorological Society, 2016. [<https://edubooks.ametsoc.org/CLTX-Ed1>]

The [campus bookstore](#) should be able to serve you with additional option.

[<https://edubooks.ametsoc.org/subject/climate-studies>]

Recommended website (videos, lecture notes, etc.)

www.meted.ucar.edu. Relevant topics will be announced from time to time. This is a free website but you need to register.

Useful Reading/reference (not required)

“Meteorology Today: An Introduction to Weather, Climate, and the Environment” by C. Donald Ahrens.

Assignments & Academic Calendar (Subjected to change)

Topics, Reading Assignments, Due Dates, Exam Dates (optional: withdrawal dates, holidays, etc.)

Date	Chapter	Topic	Remarks
1/14 – 1/20	1	Earth's Climate as a Dynamic System	Assignment 1 due
1/20 – 1/26	2	Observing Earth's Climate System	Assignment 2 due
1/27 – 2/2	3	Tools for Investigating Earth's Climate System	Assignment 3 due
2/3 – 2/9	4	Radiation and Heat in the Climate System	Assignment 4 due
2/10 – 2/16	5	Water in Earth's Climate System	Assignment 5 due
2/17 – 2/23	6	Global Atmospheric Circulation	Assignment 6 due
2/26 (W)		Midterm (Ch. 1-6)	
3/2 – 3/6		Spring Break	
3/9 – 3/15	7	Atmosphere-Ocean Relationships	Assignment 7 due
3/16 – 3/22	8	Natural and Anthropogenic Drivers of Climate Change	Assignment 8 due
3/23 – 3/29	9	Paleoclimatic Investigations: Relevancy to the Present State of Climate	Assignment 9 due
3/30 – 4/5	10	Future Projections and Extremes of Climate	Assignment 10 due
4/6 – 4/12	11	Human and Ecosystem Vulnerabilities	Assignment 11 due
4/13 – 4/19	12	Climate Change Mitigation and Energy Use	Assignment 12 due
4/20 – 4/26	13	Human Needs, Actions and Public Policy	Assignment 13 due
5/6 (W)		Final (Ch. 7-13)	

- Lecture notes and PowerPoint presentations are available in the “Course materials” section of Blackboard.
- All videos and notes from Comet are available at MetEd.ucar.edu. Please register for access.
- Quizzes, textbook questions and Investigations are available in the “Quizzes, Tests & Exams” sections of Blackboard.

Grading Scale (subjected to change)

94% and above	A	76% - 74%	C
93% - 90%	A-	73% - 70%	C-
89% - 87%	B+	69% - 67%	D+

86% - 84%	B	66% - 64%	D
83% - 80%	B-	63% - 60%	D-
79% - 77%	C+	60% - 00%	F

Grading Allocation

Course grades are based on a weighted grading scale of 100%. The breakdown for the course is as follows:

- 30% Midterm**
- 30% Final Exam** (comprehensive but focus on material covered after the midterm)
- 40% Homework assignments/Quizzes**

Strategies for success:

- Take the initiative to find help for particular topics if you find them unfamiliar and confusing.
- I encourage students to discuss climate related issues among themselves and to work together (use the emails or announcement board). You can learn a lot from your fellow student!
- I strongly recommend reading topics ahead of time, keep up on the homework, quizzes and use suggested text (or other references) for further discussion.
- Use the sample quiz questions at the AMS website to help you prepare for the graded quizzes.

Course Policies

Make-up exams

There are no make-up exams except for unfortunate circumstances and any request for a make-up should follow the University's policies and procedures.

Extra Credit

There may be limited number of assignment, pre- and post-tests and surveys for extra credit. These are mainly to help me redesign course delivery.

Late Work

No late work will be accepted. Exceptions will be made only in cases of documented medical or family emergency or religious observance. Please notify your professor by email *before the assignment is due* should an acceptable absence occur. Employment, childcare, or other academic pressures do not constitute a valid excuse for late work. There is no provision for additional papers or extra credit to substitute for missed course requirements.

ACADEMIC DISHONESTY POLICY

Academic honesty is absolutely essential. Cheating, plagiarism, or other academic misconduct will not be tolerated. If you are caught cheating, you will not pass this course and will be subject to any and all penalties specified in the student honor code. If a student is found cheating, she or he will receive an "F" for that assignment. If a student is found cheating a second time, she or he will receive an "F" for the course. See the Undergraduate Bulletin for the university Academic Dishonesty Policy.

COURSE MATERIALS

Blackboard: Students are required to be familiar with the use of Blackboard. Information, assignments, tests, and quizzes will be given on Blackboard; therefore, students must be able to navigate the site successfully to do well in the course. If you are having problems with Blackboard, it is the student's responsibility to make the professor aware of your problems and to aggressively seek solutions. Go to http://www.ncat.edu/~bbsupprt/Tips/Online_Learning_Student_FAQs.pdf for frequently asked Blackboard questions and contact info for a Blackboard consultant. If you use IE 8.0 while taking online assessments, note the actions that you should take are described at http://www.ncat.edu/~bbsupprt/Tips/IE8_Compatibility_View.pdf

EMAIL POLICY

Official correspondence from faculty, instructors, and graduate assistants will use the NCAT email address. Students are responsible for the information received and are required to monitor their email accounts on a regular basis. In accordance with the Aggie Pride Code, students should consistently communicate and behave in a manner that displays integrity, honesty, and sound character when using email to communicate with faculty, instructors, or graduate teaching assistants. Please make sure you consult the course outline / syllabus, other handouts, and the course website BEFORE submitting inquiries by email.

Special Assignments

No special assignments are anticipated.

Technical Support

If you experience any problems with your A&T account you may call Aggie Tech Support (formerly Help Desk) at 336.334.7195.

Field Trip Policies / Off-Campus Instruction and Course Activities

No field trips are anticipated for this semester. There is no travel and/or risk-related activity associated with this course.

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address: Student Travel Procedures and Student Travel Activity Waiver- <http://www.ncat.edu/student-affairs/student-services/isso/student-information/travel.html>.

Additional information is available from the office of Student Affairs, please check the website at <http://www.ncat.edu/student-affairs>.

Student Affairs website <http://www.ncat.edu/~staffair/>;

Student Handbook: <http://www.ncat.edu/~deanofst/Handbook.htm>;

Student Travel Procedures and Student Travel Activity Waiver
<http://businessfinance.ncat.edu/policies%20and%20procedures%20index.htm>

Additional information is available from the office of Student Affairs, please check the website at <http://www.ncat.edu/~staffair/>.

Below is a description of any travel and/or risk-related activity associated with this course.

Other Policies (e.g., copyright guidelines, confidentiality, etc.)

Student Handbook: <http://www.ncat.edu/~deanofst/Handbook.htm>

Family Educational Rights and Privacy Act

http://www.ncat.edu/~registra/ferpa_info/index.htm

Student Conduct & Discipline

North Carolina A&T State University has rules and regulations that govern student conduct and discipline meant to ensure the orderly and efficient conduct of the educational enterprise. It is the responsibility of each student to be knowledgeable about these rules and regulations. Please consult the undergraduate

http://www.ncat.edu/~acdaffrs/Bulletin_2008-2010/2008-2010_Undergraduate_Bulletin.pdf

and graduate bulletins: 2008-2010 Graduate Catalog.doc

<http://www.ncat.edu/~gradsch/cstudents.html> and student handbook

<http://www.ncat.edu/~deanofst/Handbook.htm> for detailed information about specific policies such as academic dishonesty, cell phones, change of grade, disability services, disruptive

behavior, general class attendance, grade appeal, incomplete grades, make up work, student grievance procedures, withdrawal, etc.

These descriptions and timelines are subject to change at the discretion of the Professor.

01.27.09 – Submitted to Faculty Senate by LEW