

The mission of Concord University is to provide quality, liberal arts based education, to foster scholarly and creative activities, and to serve the regional community (<http://www.concord.edu/academics/>).

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## Geography 359: Meteorology & Climatology

CRN 20513 (Lecture)/CRN 20515 (Lab), Section 01

**Spring 2019**

**4 Credits**

**Prerequisites:** GEOG 200 or instructor consent

**Meeting Time:** TR 12:30-1:45/R 2:00-3:50 (Lab)

**Room:** Admin 124

**Professor:** Dr. Tom Saladyga

**Office:** Admin 125B

**Email:** [saladygat@concord.edu](mailto:saladygat@concord.edu)

**Website:** [www.saladyga-EGL.com](http://www.saladyga-EGL.com)

**Office Hours:** MW 10-11/1-2; TR 11-12

**Phone:** 304-384-6040

### Course Description:

A study of earth-atmosphere energy flows, dynamic climatology, the principles that produce the climate patterns of the past and the present, and of the climate change forcing mechanisms that will generate the climates of the future (from the [Academic Catalog](#)).

The course is divided into two sections: 1) Climate Processes and Variability and 2) Climate and Society. The first section addresses fundamental principles of climatology and paleoclimatology, while the second section addresses the complex interactions between human societies and climate systems.

### Course Management System:

Blackboard - <https://elearn.concord.edu>. Sign in with your MYCU user name and password.

This course is organized in Blackboard as follows:

- **Welcome Page:** Look here for course announcements throughout the semester. Announcements will also be sent to your CU email account.
- **Syllabus:** View and download the course syllabus here.
- **Course Materials:** Labs, readings, and lecture material will be posted here.
- **Exams:** Exams will be posted here and completed in class.

**Required Textbook** (other readings will be provided in Blackboard):

Ruddiman, William F. *Earth's Climate: Past and Future*. Macmillan, 2013.

### This Course Addresses the Following Concord University Educational Goals:

Skill Outcome 1 – Effective inter-communication skills and literacy adapted as needed for the demands of various kinds of discourse including: listening and speaking, reading and writing, numeracy, graphic communication, non-verbal communication, and media and technological literacy.

Knowledge Outcome 3 - An ability to interpret events and trends within historical contexts.

Knowledge Outcome 5 - A recognition of the complex interactions between organisms, including human beings, and their environments.

### Course Learning Outcomes:

1. Explain fundamental concepts and principles in climatology including Earth-Sun energy balance, atmospheric composition, and general circulation, among others.
2. Analyze and interpret instrumental climate and paleoclimate data in the context of long-term climate variability.
3. Apply course material in discussions about the reciprocal relationships between human activities and the climate system.

**National Standards:**

All geography courses rely on the “Geography for Life” standards put forward by the Association of American Geographers, The National Geographic Society, and the National Council for Geographic Education.

**Course Requirements and Expectations:**

**Attendance** – It is required. Your grade is dependent upon participation in classroom discussions and completion of in-class activities/assessment. Course topics build on each other, so it is imperative that you are consistently in attendance. Attendance is reflected in your classroom participation grade (9% of total).

**Participation** – This includes questions, suggestions, comments, and ideas. It also includes good communication skills and patience with your classmates. Out of respect for your peers and myself, *please refrain from cell phone use during class.*

**Communication** – It is your responsibility to speak to me during class, my office hours, or via email with any questions or concerns you might have during the semester. I will respond to emails within 12 hours.

**Late Work** – All work is expected to be completed/submitted on time. Ten percentage points will be deducted for each calendar day an assignment is late.

**Computer Issues** – Computer issues cannot be used as excuse for late or incomplete work. For technical issues concerning Blackboard, contact the Concord University IT Help Desk: <http://hub.concord.edu/technology/node/12>. You must also have a backup plan if your computer is having issues. This may include borrowing a computer from a friend or using a computer on campus or at a public library.

**Grading will be determined as follows:**

<b>Task</b>	<b>Points</b>
Labs (12)	120
Exam 1	200
Exam 2	200
Classroom Participation	50
<b>Total</b>	<b>570</b>

<b>Letter Grade</b>	<b>Total Percentage</b>
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	<60%

Course Schedule:

	Date	Topic	Readings (from Ruddiman, 2013)	Assessment (Due at start of lab)
<b>Part 1: Climate Processes and Variability</b>				
<b>Week 1</b>	Lecture	Overview of Climate Science	Chapter 1	
	Lab	<b>Lab 1:</b> Climate Forcing, Response, and Feedbacks		
<b>Week 2</b>	Lecture	Earth's Climate System Today	Chapter 2	
	Lab	<b>Lab 2:</b> Earth's Climate System Today		<b>Lab 1</b>
<b>Week 3</b>	Lecture	Climate Archives, Data, and Models	Chapter 3	
	Lab	<b>Lab 3:</b> Climate Data		<b>Lab 2</b>
<b>Week 4</b>	Lecture	CO <sub>2</sub> and Long-Term Climate	Chapter 4	
	Lab	<b>Lab 4:</b> The Global Carbon Cycle		<b>Lab 3</b>
<b>Week 5</b>	Lecture	Plate Tectonics and Long-Term Climate	Chapter 5	
	Lab	<b>Lab 5:</b> Long-Term Global Carbon Cycle, CO <sub>2</sub> , and Phanerozoic Climate History		<b>Lab 4</b>
<b>Week 6</b>	Lecture	Astronomical Control of Solar Radiation	Chapter 8	
	Lab	<b>Lab 6:</b> Orbital Metronome		<b>Lab 5</b>
<b>Week 7</b>	Lecture	The Last Glacial Maximum	Chapter 13	
	Lab	<b>Lab 7:</b> Boreal Canada Pollen-Based Climate Reconstructions		<b>Lab 6</b>
<b>Week 8</b>	Lecture	Climate During and Since the Last Deglaciation	Chapter 14	
	Lab	<b>Lab 7:</b> Continued...		<b>Lab 7 (end of lab)</b>
---- Spring Break ----				
<b>Week 9</b>	Lecture	Millennial Oscillations of Climate	Chapter 15	
	Lab	<b>Lab 8:</b> Greenland Ice Core Temperature Reconstruction		
<b>Week 10</b>	Lecture	Review workshop (required)		
	Lab	<b>EXAM 1</b>		<b>Lab 8</b>
<b>Part 2: Climate and Society</b>				
<b>Week 11</b>	Lecture	Humans and Preindustrial Climate	Chapter 16	
	Lab	<b>Lab 9:</b> Drought and the Classic Maya Collapse		
<b>Week 12</b>	Lecture	Climate Changes During the Last 1,000 Years	Chapter 17	
	Lab	<b>Lab 10:</b> The Little Ice Age		<b>Lab 9</b>
<b>Week 13</b>	Lecture	Climatic Changes Since 1850	Chapter 18	
	Lab	<b>Lab 11:</b> Sea Level Change		<b>Lab 10</b>
<b>Week 14</b>	Lecture	Causes of Warming over the Last 125 Years	Chapter 19	
	Lab	<b>Lab 12:</b> Scientific Consensus		<b>Lab 11</b>
<b>Week 15</b>	Lecture	Future Climatic Change	Chapter 20	
	Lab	Review workshop (required)		<b>Lab 12</b>
<b>Finals Week</b>	TBA	<b>EXAM 2</b>		

*This schedule is subject to change. Students are responsible for changes announced in class.*

## **Institutional Information and Policies**

### **Accessibility/Accommodations:**

Concord University is committed to responding to the needs of students with disabilities as defined by the Americans with Disabilities Act. Please inform your instructor at the beginning of the class semester if you have a disability and are requesting accommodations. It is your responsibility to self-disclose that you are requesting accommodations. The University and instructor will provide you with a reasonable accommodation. You should register with CU's Disability Services Office, located in the Athens campus Jerry and Jean Beasley Student Center, Bottom Floor, across from the Campus Post Office. The Disability Services Office phone is 304-384-6086 or you can email the Director, Nancy Ellison, at nellison@concord.edu for assistance.

### **Academic Dishonesty**

Academic dishonesty is morally unacceptable as well as destructive to the learning and teaching atmosphere. Academic dishonesty includes the giving or receiving of improper help on examinations or assignments, falsifying documents, and plagiarism (the act of stealing and using, as one's own, the ideas or the expression of the ideas of another). Such dishonesty can lead to a variety of penalties — including but not limited to failure of assignment, failure of course, loss of institutional privileges, or dismissal from the University. (See University Catalog Academic Policies and Procedures.)

### **Concord University Honor Code**

A Concord University Honor Code was approved by students, staff, faculty, administration, and the CU Board of Governors. The Code states:

*"As a member of the Concord University Community I will act with honesty and integrity in accordance with our fundamental principles and I will respect myself and others while challenging them to do the same."*

The Honor Code is intended to unite the Concord community behind a culture of honesty, integrity, and civility.

### **Class/Online Attendance Policy**

Regular class attendance is part of a student's academic obligation at Concord. Irregular attendance may affect academic performance adversely and is detrimental to the atmosphere of a class. (See University Catalog Academic Policies and Procedures.)

### **Emergency Alert System**

In an effort to increase safety and security on our campus, Concord University encourages everyone to register for instant text message alerts. Alerts will only be used for security and safety notices. All students, faculty, and staff are eligible to receive text message alerts on their cell phones or email alerts. Please contact the IT Help Desk for further assistance (304-384-5291).

### **Emergency Information**

Emergency/courtesy telephones are located at the main entrance of each residence hall and at various other locations on campus. Emergency telephones can be identified by the flashing blue light and will provide the user with a direct link to Public Safety at the press of a button. To report an on-campus emergency, call 304-384-5357 or 911. The Office of Public Safety is located on the bottom floor of the Rahall Technology Center. For further emergency information go to:

<http://www.concord.edu/administration/office-public-safety>.

### **Inclement Weather Policy**

As a general policy, the University will remain in normal operations during adverse weather conditions. In the event of severe weather conditions, the following may occur:

#### University Closure

No students or employees are to report.

#### Classes Cancelled

Students do NOT report BUT employees are expected to report to work at their normal time.

#### Operating on an Inclement Weather Delay

Under this schedule, all 8 a.m. classes will start at 10 a.m. Students and faculty will follow the Inclement Weather Schedule. (See <http://www.concord.edu/emergency-alerts> for Athens/Beckley Inclement Weather Schedules.)

*\*Announcements invoking the late schedule or other options referenced above are aired on area radio and television stations and are sent as text and email messages to those enrolled for this service.*

### **Student Conduct**

In classrooms, online, laboratories, and during any activities that are part of course requirements, students are expected to observe reasonable rules of conduct.

### **Technology Services**

Contact the CU Help Desk at extension 5291 from campus or 304-384-5291 off campus. You may also e-mail [cuhelpdesk@concord.edu](mailto:cuhelpdesk@concord.edu).

**This syllabus is subject to change based on the needs of the class. Please check it regularly.**