

**GEOGRAPHY 120**  
**Earth Systems II: Atmospheric Environment**  
**Autumn 2009**

*Instructor:* Ryan Lauritsen

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*Office Hours:* Mondays and Wednesdays, 10:00-11:00am OR by appointment

**Course Details**

*Lecture:* Mondays and Wednesdays, 8:30-9:48am in [Derby Hall \(DB\)](#) 1080

*Labs:* Tuesdays, 8:30-9:48am in [Derby Hall \(DB\)](#) 0070

Tuesdays, 10:00-11:18am in [Derby Hall \(DB\)](#) 0070

**Course Materials**

*Text:* Aguado, E. and J. E. Burt, 2010. *Understanding Weather and Climate*, 5<sup>th</sup> edition.  
Pearson Education, Inc. Upper Saddle River, NJ. (ISBN: 9780321595508)

*Website:* Available through the Carmen course management system [www.carmen.osu.edu](http://www.carmen.osu.edu)

Students should have access to a good quality online or hardcopy world Atlas (e.g. Hammond, Goodes), an OSU email account, and the internet. Additional text and outside readings may also be assigned.

**Course Description**

This course will serve as an introduction to the study of the atmosphere. The primary objective of this course is to provide students with a comprehensive understanding of the atmosphere and the processes that govern its behavior. In this course students will be exposed to various aspects of meteorology, including the structure and behavior of the atmosphere, global energy balance and transfer, atmospheric circulation, precipitation processes, weather systems and severe weather. This course will emphasize the inter-relationship existing between the atmosphere, hydrosphere, biosphere and lithosphere and will illustrate how the movement of matter and energy between these spheres is responsible for the weather, climate and environments we experience on Earth.

**Goals for Natural Science GEC Course**

Natural Science coursework fosters students' understanding of the principles, theories, and methods of modern science, the relationship between science and technology, the implications of scientific discoveries and the potential of science and technology to address problems of the contemporary world.

1. Students understand the basic facts, principles, theories and methods of modern science.
2. Students learn key events in the history of science.
3. Students provide examples of the inter-dependence of scientific and technological developments.

4. Students discuss social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

### **Student Evaluation**

*Participation:* Students are required to attend lectures. I reserve the right to use any means necessary (e.g. taking attendance, pop quizzes, in-class exercises, etc.) to ensure high attendance and participation levels throughout the quarter.

*Labs:* Laboratory exercises will be conducted during lab sessions. Attendance is required. Students should read through each lab and be prepared **PRIOR** to the lab session. It is the responsibility of each student to turn in the required laboratory exercise at the beginning of class on the due date. Lab exercises will **NOT** be accepted late. All lab exercises must be completed **INDIVIDUALLY**, although, working in groups is encouraged.

*Exams:* There will be three exams (two midterms and a comprehensive final). Material presented in lecture and/or lab, as well as material from any assigned readings, is fair game for the exams. Make-up exams are only allowed in the event of a documented emergency or through **PRIOR** consent of the instructor.

*Final grade determined as follows:*

<b>Participation:</b>	<b>5%</b>
<b>Labs:</b>	<b>30%</b>
<b>Midterm Exam 1:</b>	<b>20%</b>
<b>Midterm Exam 2:</b>	<b>20%</b>
<b>Final Exam:</b>	<b>25%</b>

### **Special Statement Regarding Absences**

Based on the Office of the Provost recommendations on the current flu situation, students that feel ill are encouraged to stay home and isolate themselves from others. In addition, the “Explanatory Statement for Absence from Class” self-reporting form available online (<http://shc.osu.edu/posts/documents/absence-excuse-form.pdf>) from the Wilce Student Health Center will be accepted as documentation of medical absence and reasonable efforts will be made to provide for make-up work opportunities.

### **Academic Misconduct**

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct webpage ([http://studentaffairs.osu.edu/resource\\_csc.asp](http://studentaffairs.osu.edu/resource_csc.asp)).

## **Disability Services**

Students with disabilities that have been certified by the [Office for Disability Services](#) (150 [Pomerene Hall](#), telephone 292-3307, TDD 292-0901) will be appropriately accommodated, and should inform the instructor of their needs at the **beginning of the quarter**.

<b>Lecture and Reading Schedule*</b>			
LECTURE	CHAPTER	COURSE TOPIC	COURSE SECTION
1	1	Composition and Structure of the Atmosphere	<i>Energy and Mass</i>
2	2	Energy and Radiation	
3	2	Earth-Sun Relationships	
4	3	Energy Balance	
5	3	Temperature	
6	4	Atmospheric Pressure and Wind	
<b>MIDTERM 1</b>			
7	5	Atmospheric Moisture	<i>Water in the Atmosphere</i>
8	6	Atmospheric Stability	
9	6	Clouds	
10	7	Precipitation	
11	8	Global Circulation	<i>Distribution and Movement of Air</i>
12	8	Local Winds and ENSO	
<b>MIDTERM 2</b>			
13	9	Air Masses and Fronts	<i>Disturbances</i>
14	10	Mid-latitude Cyclones	
15	11	Thunderstorms and Tornadoes	
16	12	Tropical Cyclones	
17	13	Weather Forecasting and Analysis	
<b>FINAL EXAM</b>			

\*See the calendar on Carmen for tentative exam dates and lab due dates.