OXFORD COLLEGE

Geosciences 115 - Meteorology and Climatology

Spring 2010

Goals for the course: Geosciences 115 (Meteorology and Climatology) has been designed for either the environmental studies major or for a student who wants an interesting laboratory science course as part of their liberal arts education. As such, no prior background is assumed or necessary; just a desire to learn and an interest in the natural world. Meteorology and Climatology will give students an understanding of scientific investigation as it relates to our atmosphere. The students' observational skills will be considerably improved through the analysis of weather phenomena. Basic mathematical skills will be mastered through calculations of weather and climate parameters in the laboratory. Students will also gain an appreciation of the processes that create weather and how biomes relate to climates. These are concepts that they will be able to use outside of the classroom and in their daily lives.

Course Announcements

Instructor: Dr. Stephen W. Henderson

Office: 106 Pierce Hall

Office Phone: (770) 784-8345

Office Hours: Monday and Wednesday (10:45-12:00) and other times by appointment or walk-in's. I'm usually in my office and available.

Text: Lutgens and Tarbuck, 2007, The Atmosphere, 10th edition

Lab Manual: Carbone, 2010, Exercises for Weather and Climate, 7th edition

Organization: The class will meet for lecture 3 times each week:
Monday, Wednesday, and Friday at 9:35.
The laboratory section meets from 2:00 – 5:00 on Wednesday.

Attendance: All students are expected to attend all scheduled lecture and laboratory sessions. Attendance will be taken. No unexcused cuts are allowed in lab. Students who have an absence in lab will have their final grade reduced 3 points per absence. A student who has four or fewer lecture cuts for the entire semester will receive the addition of two points to the final course average. There are no excused absences. Students having six or more lecture absences will have their final course grade reduced one point per absence starting with the sixth absence.

Being late to class is rude and distracting. Therefore, three tardies will be considered equal to one absence. If you come in more than 15 minutes tardy, you will be counted absent. If you come in late, it is your responsibility to see me immediately after class to ensure that you are marked tardy and not absent. No adjustments will be made at a later time. When you are in class, you must be attentive and not disturb others. Leaving a class early, counts as an absence as does sleeping through a class or being generally inattentive.
Cell phones are to be turned off and can't be used during lecture or laboratory tests (including use as calculators). Bring a calculator to lab.

Honor Code: The Honor Code of Oxford College applies to Geosciences 115. All quizzes, tests, and exams will be done individually with no non-sanctioned additional materials or help. The laboratory exercises can be done with other students and with the instructor's help. If you are unsure whether or not an action may result in an honor code violation, ask the instructor first. The Honor Code at Oxford College is quite serious.

Grading System: Geosciences 115 will use the plus-minus grading system. The distribution of grades is as follows:

A	93-100	C+	77-79
A-	90-92	C	73-76
B+	87-89	C-	70-72
B	83-86	D+	67-69
B-	80-82	D	60-66
		F	59 and below

Evaluation: Lecture work will comprise 45% of your final average, lab will comprise 50% and class participation in the entire class is 5%. It is broken down as follows:

Highest two half-tests	20%
(Lowest half-test grade is dropped)	
Lecture Half-Test #1 on 1/29	
Lecture Half-Test #2 on 2/15	
Lecture Half-Test #3 on 4/2	
Lecture Test on 3/19	10%
Final Exam Tues 5/4 @ 2:00pm	15%
Lab Reports	12%
Lab Quizes (best 4 of 5)	8%
Lab Exam #1 on 3/3 in lab	10%
Lab Exam #2 on 4/21 in lab	10%
Cloud & Weather Journal (due 3/3 & 4/23)	10%
Class Participation	5%

The **lecture half-tests, full test, and final exam** will consist of short to medium-length essays, combined with objective multiple choice and matching questions. The **lab quizzes** will be short

answer and are given at the beginning of lab and cover the written material in the laboratory manual for that day's exercise. The **lab reports** will be turned in at the end of lab and the **lab exams** will cover material learned in lab. The **cloud & weather journal** will consist of twice daily observations of the atmosphere. The entries should include time and place of observations; cloud types (with sketches) and cloudiness; approximate temperature, wind direction, and speed; and any other significant weather conditions. A separate journal (other than the course notebook) is required.

Class participation is based primarily upon responses in lecture, including asking questions, providing insights into the material, and answering questions. In other words, being part of the discussion. Being an active learner is an excellent way to gain much from the course and receive the high participation grade that you deserve.

Tentative Lecture Schedule and Reading Assignments:

Day	**Topic for the Week**	**Text Assignment for the Week**
W 1/13 F 1/15	Introduction to the Atmosphere	Chapter 1
M 1/18 W 1/20 F 1/22	No Class	
M 1/25 W 1/27	Heat and Temperature	Chapters 2 & 3
F 1/29	**Lecture Half-Test #1**	
M 2/1 W 2/3 F 2/5	Moisture and Atmospheric Stability	Chapter 4
M 2/8 W 2/10 F 2/12	Condensation & Precipitation	Chapter 5
M 2/15	**Lecture Half-Test #2**	
W 2/17 F 2/19	Air Pressure & Winds	Chapter 6
M 2/22 W 2/24 F 2/26	Atmospheric Circulation	Chapter 7

M 3/1	Air Masses	Chapter 8
W 3/3		
F 3/5	No Class	

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M 3/15	Weather Patterns	Chapter 9
W 3/17		
F 3/19	**Lecture Test**	
M 3/22	Thunderstorms & Tornadoes	Chapter 10
W 3/24		
F 3/26		
M 3/29	Hurricanes	Chapter 11
W 3/31		
F 4/2	**Lecture Half-Test #3**	
M 4/5	Changing Climate	Chapter 14
W 4/7		
F 4/9		
M 4/12		
W 4/14		
F 4/16	Global Climate	Chapter 15
M 4/19		
W 4/21		
F 4/23		
M 4/26		

Laboratory Schedule for Geosciences 115:

Lab Day	Exercise	Lab Work Turned In?	Quiz?
1/20	#1 Vertical Structure of the Atmosphere	**Yes**	No
1/27	#2 Earth-Sun Geometry	No	**Yes**
2/3	#3 The Surface Energy Budget	**Yes**	No
2/10	#5 Atmospheric Moisture	No	**Yes**
2/17	#6 Saturation & Atmospheric Stability	**Yes**	No
2/24	#8 Atmospheric Motion	No	**Yes**
3/3	**Lab Test #1**		**LAB TEST #1**

3/17	#9 Weather Map Analysis	**Yes**	No
3/24	Weather of Oxford, GA	**Yes**	No
3/31	#12 Hurricanes	No	**Yes**
4/7	#13 from Paul, Meteorology (Handout)	**Yes**	No
4/14	#16 Simulating Climatic Change	No	**Yes**
4/21	**Lab Test #2**		**LAB TEST #2**