

GEOGRAPHY 120

Earth Systems II: The Atmospheric Environment

Autumn 2009

Instructor: Dr. David Porinchu
Office: 1128 Derby Hall
Phone: 247-2614
Email: porinchu.1@osu.edu
Office Hours: Tuesday, Thursday 10:00-11:30 a.m.

Course Details

Lecture: Tuesday and Thursday, 8:30-9:48 a.m. – Hitchcock Hall (HI) 0035

Recitations:

Monday, 8:30-9:48 a.m. – Derby Hall (DB) 0070, Scott M.
Monday, 10:00-11:18 a.m. – Derby Hall (DB) 0070, Scott M.
Wednesday, 8:30-9:48 a.m. – Derby Hall (DB) 0070, Scott R.
Wednesday, 10:00-11:18 a.m. – Derby Hall (DB) 0070, Scott R.

Teaching Assistants

Scott Melaragno
1145 Derby Hall; 292-6127
melaragno.19@osu.edu
Tues/Thurs, 10:30-12:00 p.m.

Scott Reinemann
1155 Derby Hall; 292-2704
reinemann.2@osu.edu
Tues/Thurs, 11:00-12:30 p.m.

Course Materials

Text: Aguado, E. and J. E. Burt, 2009. *Understanding Weather and Climate*, 5th ed., Prentice Hall, Upper Saddle River, NJ. (ISBN-10: 0321595505)

In addition, students should have access to a world Atlas (Hammond, Goodes, or comparable), an OSU email account and the internet. **Handouts covering lab exercises are available in a course pack which can be obtained from Uni-print (formerly known as Cop-ez; Tuttle Park Place, 292-2219).** Additional text and outside readings may also be assigned.

Course Webpage: <https://carmen.osu.edu/>

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

Courses in natural sciences foster an understanding of the principles, theories and methods of modern science, the relationship between science and technology, and the effects of science and technology on the environment.

Objectives

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

Recitations: A total of eight exercises will be assigned during the quarter. It is the responsibility of each student to turn in the required laboratory exercises on the due date. Lab exercises turned in following the due date will NOT be accepted without the prior consent of the TA. All lab exercises must be completed individually, although, working in groups is encouraged.

Exams: There are three exams - two midterm exams and a comprehensive final exam. Material presented in lecture and/or the recitations, as well as material from the assigned readings, is fair game for the exams. Students are strongly encouraged to attend all lectures and recitations and obtain notes for those lectures that they may have missed. Make-up exams are possible in the event of a documented emergency or through prior consent of the instructor.

Your final grade will be determined as follows:

Midterm Exam 1 – 15%

Midterm Exam 2 – 15%

Final Exam – 30%

Recitations – 35%

Pop Quizzes – 5%

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 (http://studentaffairs.osu.edu/info_for_students/csc.asp).

Disability Statement

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; <http://www.ods.ohio-state.edu/>.

Lecture Outline

Date	Lecture Topic(s)	Readings
09/24	Introduction to the course	
09/29	Composition and structure of the atmosphere	Chapter 1
10/01	Solar radiation and the seasons	Chapter 2
10/06	Energy balance and temperature	Chapter 3
10/08	Atmospheric pressure and wind	Chapter 4
10/13	Atmospheric pressure and wind (cont.)	Chapter 4 (cont.)
10/15	Midterm exam I	
10/20	Atmospheric moisture	Chapter 5
10/22	Atmospheric moisture (cont.)	Chapter 5 (cont.)
10/27	Cloud development and types	Chapter 6
10/29	Precipitation processes	Chapter 7
11/03	Atmospheric circulation	Chapter 8
11/05	Air masses and fronts	Chapter 9
11/10	Mid-latitude cyclones	Chapter 10
11/12	Midterm exam II	
11/17	Severe weather: thunderstorms and tornadoes	Chapter 11
11/19	Severe weather: tropical storms and hurricanes	Chapter 12
11/24	Atmospheric pollution	Chapter 14
11/26	THANKSGIVING!!!	
12/01	Climate change: past	Chapter 16
12/03	Climate change: present and future	Chapter 16 (cont.)

Final Exam: 9 December 2009 from 7:30 AM to 9:18 AM
Location: Hitchcock Hall (HI) 0035

Some Tips *(how to do well)*

1. Review your notes & text BEFORE every lecture (remember those quizzes).
2. Show up for class, on time.
3. Observe the weather daily.
4. Pay attention to the web page for updates.