

Geography 520: Climatology

Autumn Quarter 2009, 5 credits, call number: 12239

M-W-F 10:30 AM - 12:18 PM, Derby Hall, Rm. 1080

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Office Hours: Office hours: M/W 3-4, or by appointment

Textbook - Oliver J.E. and J.J. Hidore, 2001: Climatology: An Atmospheric Science, 2nd Ed. Prentice Hall, 410 pp. ISBN: 0130922056

Course Objectives: This course is designed to provide an introduction to *Climatology*, the study of the average state of the weather on our planet. Emphasis is made on energy budgets, regional climates, climate change, and past and future climates. Energy budgets include the solar energy receipt, infrared radiation loss, turbulent heat fluxes, and the redistribution in the earth-atmosphere system as well as the role of atmospheric moisture, its global spatial distribution, and its importance in energy exchange, and cloud and precipitation formation. Course lectures will describe the causes, and the spatial distribution, of climates of the world as well as the physical mechanisms of some observed weather phenomena. The physical causes of and spatial variations in small- and large-scale motions of the atmosphere will be described. The distribution and causes of 21st century climate will be explained and the distributions of past climates, methods for reconstructing them, and the potential explanations for them will be discussed. The course will also consider how humankind has both intentionally and unintentionally become a factor in the physical processes of weather and climate. Many students will find the basic concepts and ideas discussed in the course will have applications in their fields of interest as well as applications to their daily lives.

Upon successful completion of the course, students should (1) be able to describe the structure and composition of the atmosphere and how it has changed with time; (2) know the factors causing solar radiant energy variations on earth and be able to describe the global radiation balance; (3) be able to explain the physical processes leading to the formation of atmospheric features including clouds, precipitation, winds, and storms; (4) have a good understanding of the physical behavior of gases, and of the different forms of energy and their role in atmospheric motion and weather systems; (5) have a good understanding of environmental issues pertaining to the atmosphere including “global warming”, and ozone depletion; and (6) be able to describe the general distribution on the world of temperature, precipitation and climates – and the physical mechanisms that cause these distributions to occur.

Other policies

Course Expectations Students are expected to meet course prerequisites which include a working knowledge of algebra. Your grade is based on a midterm/final (comprehensive) exams and homework exercises. There will graded exercises that may incorporate computer-based exercises. Assignments may not be handed in late, and exams and assignments may not be made-up without instructor consent. Material covered in the exercises and exams will come

from assigned readings and supplemental material introduced only during lecture. Note that it is necessary to keep up on reading. Be on time for class. Coming in late is disruptive and disrespectful to both students and instructor.

Barring extraordinary circumstances there will be no make-up exams. The instructor decides what is extraordinary. Students who anticipate missing an exam must make arrangements with the instructor **at least ONE WEEK prior**. Official documentation will be required and verified before a make-up exam will be considered. No in-class activity or exam can be made up without special advanced notice, given at the instructor's discretion.

Attendance Certain materials that appear on the midterm and final exams will be covered in lecture only. Occasional class attendance will be taken and will factor into your final grade.

Students with disabilities It is up to the student to inform the instructor at the beginning of the term for any special accommodation to be made associated with learning disabilities. Be prepared to present relevant certification. Please also feel free to contact the Office of Disabilities Services 292-3307 in room 150 of Pomerene Hall.

Class Participation Being active in class participation is to your advantage and may improve your final grade if you end up borderline between grades. You should feel comfortable asking questions. We're in this together.

Grading: Your final grade will be based on 500 points; midterm (110 points); final (150 points). The remaining 210 points is composed of A) 8 in-class or take-home exercises (including quizzes), the lowest grade from the 8 30 point scores is dropped; and B) a 30 point class participation, attendance, and professionalism score that the instructor will assign at the end of the course. The instructor reserves the right to bump your grade up **or** down. The grading scale is as follows: 100-93% A, 92-90% A-, 89-87% B+, 86-83% B, 82-80% B-, 79-77% C+, 76-73% C, 72-70% C-, 69-67% D+, 66-63% D, 62-60% D-, 59% and below E.

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 Services 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/>.

Cell Phones Like on airplanes, interfere with navigation of the course, therefore, cell phones and pagers must be turned *OFF* during class as they interfere with the navigation of the course.

Extra Credit No extra credit assignments are planned.

TIPS ON HOW TO DO WELL IN THE COURSE

- # Review your schedule
- # Review notes & text BEFORE every lecture.
- # Show up for class, on time.
- # Participate in class discussion. Ask questions.
- # Pay attention to the web page for updates.

FINAL EXAM: To Be Determined

SCHEDULE

The schedule may change slightly as the class evolves. Instructor will alert students if/when schedule changes.

Course Schedule (see course web page <http://geog-www.sbs.ohio-state.edu/courses/G520/jbox/> for current schedule).