

FALL 2018
GEO 135: GLOBAL CLIMATE CHANGE

Tuesdays and Thursdays 11:00 – 11:50
234 Whitehall Classroom Bldg

Home page: Canvas and <http://www.uky.edu/~jast239/courses/climate/climate.html>

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Mondays and Wednesdays
Friday recitations:
Section 1 10-10:50 JSB 108
Section 2 11-11:50 JSB 108
Section 3 1-01:50 CP 183

Required materials

There is no formal textbook to be purchased for the class. All required readings are freely available from the class home page. Students will be expected to rent and watch several online videos as part of the class. These are available through prominent online video outlets. In some cases they are free. Other times students are expect to pay the online rental price.

Students are also required to purchase a temperature sensor. The cost is \$35. Because the use of this instrument will be part of a group project, students may split the cost. Students may work individually, in groups of two, or in groups of three.

Course description

This course provides a broad overview of the processes that drive human-caused climate change. As a prerequisite to understand the human influence on climate, we also examine the scientific fundamentals of natural climate change and how weather and climate can be studied and predicted. Our focus is not just on the human modification of the atmosphere through the addition of carbon dioxide via fossil fuel consumption. Land cover change and aerosol air pollution are also very important components of climate change. We focus attention on some of the more rapidly evolving facets of climate change, including the melting of the cryosphere, sea-level rise, extreme heat and human health, and geoengineering. Although our primary focus is a basic scientific literacy with climate change science, this course also examines the implications of climate change for politics and societal issues involving climate refugees, coastal flooding, and the resource governance of the Arctic. We also consider the difference between climate science and pseudoscience and how to evaluate evidence for scientific consensus. Successful completion of this class fulfills the UK Gen Ed Intellectual Inquiry – Natural/Physical / Mathematical Sciences requirement.

Student learning outcomes/objectives

Upon completion, students should be able to:

- Explain the principle functions of the climate system, as well as its controls and interactions with the hydrosphere and biosphere.

- Discuss how scale is relevant for comprehending the cause and effect relationships in the Earth's climate system.
- Relate a narrative of climate change beginning with the Pleistocene and up through the last several centuries and to today
- Make an informed scientific statement on the predicted changes to climate in the next century
- Describe the methods of inquiry used to infer paleoclimatic as well as more recent climate change and describe their strengths and weaknesses.
- Apply fundamental principles to interpret recent observational weather and climate data as well as and proxy data
- Explain how historical climate data and paleoclimatic reconstructions are necessary to understand and predict climate change
- Recognize the difference between scientific data, analyses and interpretation, journalism and pseudoscience.
- Demonstrate an ability to find, evaluate and use sources of scientific information on climate change and related research.
- Be able to identify an open research question in climate science; understand the methods of data collection, analysis and interpretation; outline the limitations of such a study; and suggest productive avenues for future research.

COURSE ACTIVITIES

		Points	Percent
Tests	4 at 100 points each	400	45%
Quizzes	20 at 10 points each	200	25%
UK Core Project	3 components at 50 points each	150	20%
Attendance and participation	Upon second unexecused absence, final percent grade will be reduced five points	100	10%
Total possible points		850	

Grading

Grades will be posted online. They will be updated and uploaded only after each test.

<p>A > 90% B 80 – 89% C 70 – 79% D 60 – 69% E < 60%</p>	<p>Sample grade calculation: You scored 85/100, 93/100, 79/100, and 87/100 for your four tests. You made 10's on all 20 of your quizzes, so you earned 200 points. Your UK Core project received a score of 135/150. Your participation grade was 90/100. This sums to 85 + 93 + 79 + 87 + 200 + 135 + 90 = 769 points. Your class grade is 769/850 points or 90%. If you do not have more than one unexecused absence, this would be your final grade, an A based on the scale below. However, if you had two unexcused absences, your grade would be reduced 5 points, giving you an 85 or a B. With three unexcused absences, this would reduce you to 80%. There would be subsequent reductions for each unexcused absence.</p>
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Description of course activities

Quizzes. Twenty mostly multiple choice quizzes will be given in class and online. Whether the quiz is online or in class will not be announced. You are expected to have completed the readings or the film on the dates the readings or film are listed on the syllabus. The first quiz is Thursday August 30th.

Tests. Format will consist of multiple choice, definition, short answer, and essay. Part of each test will also be visual. You will be asked to identify photographs, graphs, and maps that were part of lectures and Powerpoint slides. Four tests will be administered. Each test covers only the material preceding it. No tests are cumulative. Taking good notes in class is critical to doing well on the tests. Midterm grades will be posted on myUK. There is no final exam, but the last test of the semester will be administered during exam week.

Attendance and participation. A final percentage out of 100 points will be derived from 1) the number of days missed out of number of days in which attendance was formally assessed; and 2) observations of the individual student made by the instructor as well as the teaching assistant. Thus being present does not automatically mean that you are participating and getting full credit for this component of your grade. This percentage can be reduced due to the following: 1) Distracted attendance: the student is present but is inattentive and uninvolved, which can also include use of electronic devices in class; 2) Disruptive attendance: the student is talking excessively or using electronic devices during lecture in such a manner that it is distracting to the instructor and/or other students; and 3) Uninformed attendance: the student requires undue guidance and takes time from instruction due to failure to adequately monitor class activities, deadlines, syllabus guidelines, and instructions. The instructor will keep a logbook to document these instances.

UK Core Project. Students will set up a temperature monitoring station using a small microsensor they are required to purchase for \$35. Students may work in groups of up to three and split the cost. This hands-on project will familiarize the students with scientific methods about the design, data collection, and analysis of basic climate data. The students will summarize and critique the results of their investigation in light of the micro and macroclimate influences on temperature. Detailed instructions for this activity will be presented in class. Three components make up your grade. The first component requires competency in Excel and in the possession and operation of our temperature sensor by a specific date. The second component involves the collection and archiving of your temperature data according to the criteria and standards given. The third component is the analysis of these data and a presentation of the results.

Course policies

Dead Week. The university rules for dead week permit the continuation of activities that have been announced ahead of time and are part of the normal routine throughout the semester. The announced quizzes and scheduled Friday recitation for dead week do not depart from their typical format and are allowable.

Attendance. Attendance will be monitored every class meeting. Attendance will be taken by roll call, seating chart, or in some cases, students will be asked to complete a short activity in class or to bring in an assignment completed at home. Unexcused absences will impact your final grade. Upon a second unexcused absence, your final grade will be lowered by five

points. Each subsequent unexcused absence will lower your final grade another five points. If a student has excused absences in excess of one-fifth of the class contact hours for the course, the student shall have the right to receive a withdrawal (W), or the instructor may award an incomplete (I) for the course grade if the student declines to receive a W.

There are 43 regular class meetings not including test days.

Communication. Communications in the classroom will be prioritized over electronic media. I will not respond to all emails, particularly those with questions that can be answered by the syllabus or that were answered in class. If you email me, use the address jast239@uky.edu. Do not use Canvas to send me messages. You will receive emails from the instructor on a regular basis. Please check your UK email often or make sure it is being forwarded to your main email interface.

Excused Absences. The university defines the following as acceptable reasons for excused absences: a) illness, b) illness or death of family member, c) University-related trips, d) major religious holidays, and e) other circumstances found to fit "reasonable cause for nonattendance" by the professor. Job interviews, job fairs, standardized test administrations, family weddings, possession of airline tickets, and Greek events do not qualify as excused absences. Students with chronic medical conditions that jeopardize attendance must go through UK Disability Services to have these absences investigated and documented. In other words, if you inform me you will be missing a lot of classes due to migraines, you will have to get this approved through UK Disability Services for these absences to be approved.

Verification of Absences. Students should notify the professor of absences prior to class whenever possible. The instructor has the right to request appropriate verification to document the status of an absence as excused or unexcused. Written notification or verification must be provided within one week of the absence. Appropriate written notification of absences due to university-related trips will consist of a formal letter or email sent by the faculty in charge of your travel before the trip occurs.

Please keep in mind that if you are absent, I will keep this absence logged in my gradebook whether it is excused or unexcused. I do not revert absences to presences. All decisions about whether or not an absence is excused or unexcused will be made based on your overall record of attendance. In other words, you can and should follow up on any absence with the required documentation, but I will not weigh in on its status as excused or unexcused until I see your entire record of attendance for the semester.

Students must contact the instructor the night before the administration of a test if they become ill and expect to be absent the next day. No makeups will be given unless the absence is announced well ahead of time and it meets formal university criteria as an excused absence. Even then, any makeup will remain contingent upon the students overall record of attendance. If a student has been absent repeatedly in the days leading up to a test, the student will be required to improve attendance before a makeup can be given. Even then, the instructor reserves the right to offer makeup tests after the last test at the end of the semester. Students who contact me just before or after a test has been administered or who are absent unexcused on the day of the test will receive an automatic zero. No tests will be administered once the first test has been completed.

University Health Services (UHS) recognizes the important public health and policy reasons why a sufficiently ill student ought to be absent from class and also not make a visit to UHS.

UHS provides in this circumstance an “Explanatory Statement of Absence from Class” that students may complete and submit to the Instructor to document an excused absence from class. This is a UHS “Tier 1” document. *Faculty will decide whether this Tier 1 document is acceptable as “appropriate verification” of the student’s illness. Whether a Tier 1 excuse is acceptable will be decided in each individual circumstance, with the final decision also contingent upon the overall attendance record for the semester.*

The UHS Tier 2 document is an email sent to the student, at the student’s request. The email confirms that the student made a medical visit to UHS. In order to provide the Instructor with verification of an illness, the student will forward the email from UHS to the Instructor of Record. The forwarded Tier 2 email informs the faculty member that she or he may confirm the UHS visit by emailing the identified sender of the confirming email and request that the sender verify the authenticity of the Tier 2 email sent to the student. *Tier 2 excuses are not automatically excused absences. Whether a Tier 2 excuse is acceptable will be decided in each individual circumstance, with the final decision also contingent upon the overall attendance record for the semester.*

The Tier 3 document emailed to students “states any applicable restrictions [on the student] based on illness or injury.” Such a restriction may be that the student must be absent from class for a defined number of days. *Whether a Tier 3 excuse is acceptable will be decided in each individual circumstance, with the final decision also contingent upon overall attendance record for the semester.*

Tier 2 and Tier 3 University Health Service (UHS) forms for excused absences include both the date the student was seen in the clinic as well as the date the student made an appointment.

As with UHS documentation, whether outside doctor or hospital notes are acceptable will be decided in each individual circumstance by the instructor, with the final decision also contingent upon your overall attendance for the semester.

Academic Integrity. Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed. Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of Student Rights and Responsibilities

(<http://www.uky.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission. When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else’s work,

whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1). Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Accommodations due to disability. Students with a documented disability and requesting academic accommodations must provide the instructor with a Letter of Accommodation from the UK Disability Resource Center (DRC). If the student is not registered with the DRC, she or he may contact David T. Beach (dtbeac1@uky.edu). The DRC is located in Suite 407 of the Multidisciplinary Science Building, 725 Rose Street, 0082. To contact the DRC by phone, please call V/TDD (859) 257-2754.

Classroom behavior policies. Due to growing issues with inattentiveness in class, I have switched back to a no cell phones class policy. They are to be kept out of site during class and students who use them run the risk of a lowered participation grade and the possibility of being asked to leave the classroom. Laptops are allowed, but again, if they are detracting from your attentiveness you run the risk of a lowered participation grade.

Title IV Compliance Requirements. Federal regulation mandates that federal financial aid funds (Title IV) may only be disbursed to students who are actually enrolled and engaged in coursework. This regulation mandates that institutions provide evidence of engagement early in each semester. Failure to provide evidence includes sizeable fees and fines for the university. To comply with this mandate, all instructors of undergraduate and graduate courses (including lab courses), independent studies, online courses, and research credit) will be required to confirm student attendance or engagement in classes during the two-week period following the last day to add a class. For fall semester, 2018, the last day to add a course is August 28." To comply with the new Title IV regulation, faculty will be required to report students for non-attendance/nonparticipation/non-engagement through the class roster in MyUK. Faculty only need to mark students that are not attending versus marking each student on the roster. If all students are attending, faculty can indicate this in one place on the roster. Once a student is marked for nonattendance/non-participation/non-engagement in the class roster, the student will be dropped from the class and from CANVAS with a grade symbol "NA". The student, faculty member, and advisor will be notified of the drop action via the ACT platform. If an undergraduate student drops below full-time, financial aid disbursement will be reduced. The drop will result in a 50% refund to the student. Courses dropped for non-attendance/non-participation/nonengagement will not appear on the student's transcript. If a student is adversely or unfairly impacted by the new requirements and forced to withdraw from a class, the student may seek relief through the tuition appeals process. To summarize, the monitoring period will be from August 29 to September 5. The reporting period will be from September 6 to September 12. Instructors should report non-compliant students on the class

roll accessed through MyUK Specific questions regarding this policy should be directed to your college's Associate Dean or to the Registrar.

Recording in the classroom. Video and audio recordings are not permitted during the class unless the student has received prior permission from the Professors. If permission is granted, recording of other students is prohibited. Any distribution of recordings is also prohibited. Students with specific recording accommodations approved by the Disability Resource Center should present their official documentation to the professor. All content for this course, including handouts, assignments, and powerpoint lectures are the intellectual property of the instructors and cannot be reproduced, sold, or used for any purpose other than educational work in this class without prior permission from the professor.