

Global Warming: Science & Impacts

GEOG/AOS/NIES 332

SPRING 2016

Instructor: **Professor Jack Williams**, Department of Geography
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Office Hours: Tuesday 4-5pm, Thursday 2:30-3:45pm, or by appointment.

TA: **Daniel Grant**, Graduate Student, Department of Geography
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Office Hours: See Discussion Syllabus

Lectures: **Chamberlin 2241, Tuesday/Thursday 11am-12:15pm**

Discussion Sections:

Sections 301, 302: Mon 11-11:50am, 350 Science Hall
Sections 304, 305: Mon, 12:05-12:55, 350 Science Hall
Sections 303, 306: Mon 1:20-2:10pm, 350 Science Hall
Each discussion section will meet every other week. See Discussion Schedule for more information.

Course Websites & Social Media

Learn@UW: learnuw.wisc.edu (requires NetID)
Public website: www.geography.wisc.edu/courses/geog332/

INTRODUCTION

Climate change is underway and will continue into the foreseeable future. Climate change is caused by a combination of natural processes and human alterations of the earth system, with the latter increasing in importance. Because climate directly or indirectly affects all aspects of our lives (and vice versa), it is essential for 21st-century citizens to be knowledgeable about climate science and policy. This course offers a fundamental understanding of how and why global warming is happening, and what to expect in the future. Together, we will investigate and discuss the evidence for climate change, the interplay among human and physical drivers, the science that explains these observations, predicted impacts on humans and ecosystems, and proposed solutions.

The first half of this class reviews the science of global warming. In the second half, the focus shifts to climate-change impacts across scales from global to local. In the last several weeks, we turn to a review of technological solutions, policy options, and decision-making frameworks. Our goal is to help you develop a well-grounded understanding of why climate change is happening, how it is likely to impact your life, and how you can be part of the solution to this grand challenge in managing and stewarding our earth system.

We intentionally teach to a broad range of students in this class, from majors in the environmental sciences and related fields to students pursuing degrees in international studies, economics, and communications to students simply interested in the topic. This intermediate-level course draws extensively on the findings from the most recent

Intergovernmental Panel on Climate Change reports (IPCC 2007 and 2013) and consists of a mixture of lectures, discussions, and self-directed exploration of on-line and published resources. An introductory background in earth system or atmospheric science (Geography/IES 120, 127; AOS 100, 101, or equivalent) is helpful but not required. This course fulfills the physical science requirement.

COURSE POLICIES

GRADE COMPONENTS

Discussion Exercises	35% (each discussion exercise is 5%)
Discussion and Class Participation	5%
Exam I	20%
Exam II	20%
Exam III	20%

EXAMINATIONS

There will be three exams that will mostly have a short-answer format. They will be non-cumulative, meaning that each will test to the material covered since the prior exam.

LECTURE READINGS

- 1) *Archer, D. 2012. Global Warming: Understanding the Forecast, 2nd ed., Wiley.*
 - 2) *Houghton, J. 2015. Global Warming: The Complete Briefing, 5th ed., Cambridge U. Press*
 - 3) *Selected readings.* The study of global warming is a fast-moving field, so textbooks tend to go out of date fairly quickly. Hence, this course relies heavily on additional readings. Readings and due dates are described in an accompanying document
- Lecture Readings.** These readings will be posted as PDFs on Learn@UW

The library has several copies of the Archer textbook, which have been placed on reserve at the Geography Library (Science Hall, 550 North Park St.) and the Memorial Library (Library). Reserve textbooks can be checked out for a few hours. The Library does not yet have copies of the Houghton textbook, but we are working on it.

DISCUSSION SECTIONS AND EXERCISES

This course has six discussion sections, with three sections meeting each week. Enrollment and participation in Discussion Sections are a required component of this course. Students not meeting in discussion section usually will have readings or other preparatory activities in off weeks. See Discussion Syllabus for more information.

Each discussion meeting will have an accompanying exercise, usually a set of readings, an essay, or other assignment that must be completed in advance of the discussion meeting. Discussion exercises will be distributed using the Learn@UW course website. Exercises must be turned in during the corresponding discussion meeting. Overdue assignments will be penalized by a set amount per day after the due date.

COURSE COMMUNICATIONS – LEARNUW, OFFICE HOURS

Learn@UW will be used to post news items, readings, assignments, and powerpoint slides from lecture. A copy of this syllabus can also be found there. There is also a public course website at www.geography.wisc.edu/courses/geog332/ but this is mainly intended for broader outreach.

If you have questions about course material, we encourage you to visit us during our office hours – face-to-face conversation is usually the best way to clarify concepts, and we are here to help. We also encourage you to post questions to the Discussion Forum on LearnUW; we monitor this Forum regularly. We sometimes may repost answers to the Forum for questions sent to us by email.

MEDICAL ABSENCES AND MISSED CLASSES

You are expected to attend all lectures and all meetings of your Discussion Section. However, campus policy with respect to flu and other contagious diseases places a premium on minimizing the risk of spreading disease. Specifically, **if you are running a fever over 100°F with a cough or sore throat, stay home!** Wait until 24 hours after your fever breaks before returning to class. The flu usually takes 3 to 5 days to run its course.

Please do not contact the Professor or TA to tell them you will miss one or two lectures. However, if a longer absence due to illness or other circumstances is required, do contact the Professor.

Regardless of reason, if you miss either it is your responsibility to make up the material. If you miss lecture for illness, review the Lecture slides that will be posted on Learn@UW. Neither the TA nor the Professor will respond to email requests with respect to missed lecture content, but we would be glad to discuss it in Office Hours once you have done all readings and studied the Lecture slides.

If you will miss a Discussion section for illness, contact the TA *in advance* so that you can reschedule to another Discussion section covering the same material. This will be done only in the case of illness, and normally no more than once for each student. Studying with classmates is encouraged -- good venues for reaching out to your classmates include the Discussion forum on LearnUW.

ACADEMIC INTEGRITY

Academic integrity is expected from all students. Please make you are familiar with the expectations as outlined at <http://students.wisc.edu/doso/acadintegrity.html> and <http://students.wisc.edu/doso/students.html>.

ADDITIONAL RESOURCES FOR STUDENTS

- McBurney Disability Resource Center. We are happy to work with students who need additional accommodations. <http://www.mcburney.wisc.edu/>
- Multicultural Student Center. The MSC exists to make sure students of all backgrounds are successful at UW. <https://msc.wisc.edu>
- GUTS (Greater University Tutoring Service) tutoring. See their homepage to inquire about individual tutors/general tutoring sessions. <http://guts.studentorg.wisc.edu/>
- UW Writing Center. See their website for information about drop-in or scheduled appointments with expert writers. They will help with just about any type of writing assignments/needs. <http://www.writing.wisc.edu/>
- L&S Student and Academic Affairs. See their website for issues regarding medical absences and other emergencies that may affect your ability to attend courses and complete coursework. <http://saa.ls.wisc.edu>