Syllabus GEOL1330 Global Warming - Spring 2016

This course satisfies the University of Arlington core curriculum requirements in Life and Physical Sciences.

Instructor: Arne Winguth, Associate Professor
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Office Hours: Tuesday & Thursday 13:30 -14:00 or after appointment

Section Information:
Lecture: GEOL1350-001
Lab: GEOL1350-011

Time and Place of Class Meetings:
Lecture 001: Tuesday & Thursday 12:30 – 13:20 Geosciences Room 104
Lab 011: Thursday, 14:00 – 15:50, Geosciences Room 246

Required Textbook:

Recommended reading:

Course description:
Future climate change is among the most serious environmental problems facing the world community. This class will survey the scientific basis of global warming
and the impacts of climate change on human society. The course will discuss mitigation strategies for creating a more sustainable environment.

**Student Learning Outcomes:**
This core course covers causes and impact of climate change ranging from the historical record to future prediction, and the possible associated socioeconomic impacts and risks. It is one of the courses listed for the interdisciplinary environmental and sustainability studies minor.

After completion of this class, students will have enhanced critical thinking skills, communication skills, teamwork, and empirical and quantitative skills in earth and environmental science and will have a well-rounded understanding of the major climate science processes.

The students will be able to:

- Describe the Earth’s energy balance, and feedbacks in the climate system.
- Demonstrate how major fossil fuel resources have been formed and what they are currently used for.
- Assess the historic and projected emissions of greenhouse gases from fossil fuels.
- Describe the global carbon cycle and the interactions between its various components.
- Analyze the climate record of the past from ice cores, tree rings, and sedimentary deposits.
- Explain the fundamental theories in weather and climate forecast and the application of these theories for future predictions.
- Interpret results from climate projections including expected regional trends in mean climate and climate extremes in temperature and the hydrological cycle.
- Discuss projected socioeconomic impacts by climate change by droughts, flooding and other severe weather conditions.
- Analyze how health conditions change and diseases may propagate.
- Identify alternative strategies for future energy resources and innovations to improve environmental sustainability.

Students will gain a fundamental knowledge in scientific problems and a better understanding of impacts of future climate change.
Grading:

Grading calculation:
Lecture Portion: 70% of course
Lab Portion: 30% of course

Lecture Portion: Pop Quizzes (3) 10% of course (3.33% each)
Exam (3) 40% of course (13.33% each)
Final Exam 20% of course
Lab Portion: Lab exercises (9) 20% of course (2.22% each)
Signature project 10% of course

Final grade calculation:
0.2 x lab + 0.10 x project + 0.40 x exams + 0.20 x final exam + 0.1 x pop quizzes
Score will be translated into a grade based on class average.

Grades will not be released over the phone or by email. Grades must be either obtained in person or from the UTA online database.

Exams:
Exams will be mostly multiple-choice questions, but the final exam will also contain essay questions. No early exams are permitted. Exams must be taken at the scheduled time. Make-up exams can only be taken in cases of illness or family emergency. A valid note from the university disciplinary officer or doctor is required in these cases. Students who do not take an exam receive zero points as a grade on that exam. Make-up exams are scheduled and set by the instructor.

Quizzes:
Lecture quizzes are not announced. The 3 best out of 4 quizzes will be counted towards the total grade. There are no make-up quizzes. Lecture Tool quizzes are taken on-line in class and count as extra credit.

Lab exercises:
Nine weekly lab assignments as part of the lab section will be given throughout the semester. Maximum average grade of labs will be no more than 100%. Identical copy of a term paper from web or other sources (plagiarized papers) will result in an F.

Attendance:
Attendance is strongly recommended and will be taken in form of lecture tool quizzes. Lack of attendance will very likely influence the final grade.

Climate Change Research Project (signature project): A signature research assignment in the area of climate change is part of the core curriculum
assessment and is designed to stimulate critical thinking skills, team skills, communication and empirical and quantitative skills. A list of research topics will be handed out at the beginning of the semester, however, teams can also propose own topics to the instructor, which need to be approved. Total project length for each team will be four pages, letter size, single-spaced, 12 pt times new roman font including graphs and references (at least two; also cited in the text). Each team member will individually present their project part. Total length of team presentation will be a 4-minute presentation per student. Identical copy of a term paper from web or other sources (plagiarized papers or web pages) will result in an F.

**Format of signature project submission:** pdf format via safe assign on blackboard

**Extra credit:**
Two extra credit assignments will be given during the class. Extra credit assignments will count towards quizzes. Maximum average grade of quizzes will be no more than 100%.

**Teamwork:** Teamwork is encouraged to stimulate scientific discussion in lecture and lab. Teamwork is allowed in the lab and for the signature project. Maximum team size is 3 students. It is the student’s responsibility to form a team and coordinate with other team members.

**Class Material:** [https://elearn.uta.edu/webapps/login/](https://elearn.uta.edu/webapps/login/)

**Blackboard Info:** [http://www.uta.edu/blackboard/students/index.html](http://www.uta.edu/blackboard/students/index.html)

**Expectations for Out-of-Class Study:** A general rule of thumb is this: for every credit hour earned, a student should spend 3 hours per week working outside of class. Hence, a 3-credit course might have a minimum expectation of 9 hours of reading, study, etc.

**Grade Grievances:** Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog: [http://catalog.uta.edu/academicregulations/grades/#undergraduatetext](http://catalog.uta.edu/academicregulations/grades/#undergraduatetext) for graduate courses, see [http://catalog.uta.edu/academicregulations/grades/#graduatetext](http://catalog.uta.edu/academicregulations/grades/#graduatetext).

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or
session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/aa/fao/).

**Americans with Disabilities Act:** UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA), The Americans with Disabilities Amendments Act (ADAAA),* and *Section 504 of the Rehabilitation Act.* All instructors at UT Arlington are required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a letter certified by the **Office for Students with Disabilities (OSD).** Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

**The Office for Students with Disabilities, (OSD)** www.uta.edu/disability or calling 817-272-3364.

**Counseling and Psychological Services, (CAPS)** www.uta.edu/caps/ or calling 817-272-3671.

**Title IX:** The University of Texas at Arlington is committed to upholding U.S. Federal Law “Title IX” such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

**Academic Integrity:** Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

> I **pledge, on my honor,** to uphold UT Arlington’s tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

> I **promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.**

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents’ Rule 50101, §2.2,* suspected violations of university’s standards for academic integrity (including
the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student’s suspension or expulsion from the University.

**Lab Safety Training (required):** Students registered for this course must complete all required lab safety training prior to entering the lab and undertaking any activities. Once completed, Lab Safety Training is valid for the remainder of the same academic year (i.e., through the following August) and must be completed anew in subsequent years. There are no exceptions to this University policy. Failure to complete the required training will preclude participation in any lab activities, including those for which a grade is assigned.

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at [http://www.uta.edu/oit/cs/email/mavmail.php](http://www.uta.edu/oit/cs/email/mavmail.php).

**Student Feedback Survey:** At the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit [http://www.uta.edu/sfs](http://www.uta.edu/sfs).

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabus. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.
Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities. More details: UT Arlington Procedure 7-6: Emergency/Fire Evacuation Procedures (https://www.uta.edu/policy/procedure/7-6).

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

The English Writing Center (411LIBR): Hours are 9 am to 8 pm Mondays-Thursdays, 9 am to 3 pm Fridays and Noon to 5 pm Saturdays and Sundays. Walk In Quick Hits sessions during all open hours Mon-Thurs. Register and make appointments online at http://uta.mywconline.com. Classroom visits, workshops, and advanced services for graduate students and faculty are also available. Please see www.uta.edu/owl for detailed information.

Emergency Phone Numbers In case of an on-campus emergency, call the UT Arlington Police Department at 817-272-3003 (non-campus phone), 2-3003 (campus phone). You may also dial 911.

For non-emergencies, contact the UTA PD at 817-272-3381

Librarian to Contact: Antoinette Nelson (nelsona@uta.edu)

Other important library information
- Library Home Page http://www.uta.edu/library
- Subject Guides http://libguides.uta.edu
- Subject Librarians http://www.uta.edu/library/help/subject-librarians.php
- Database List http://www.uta.edu/library/databases/index.php
- Course Reserves http://pulse.uta.edu/vwebv/enterCourseReserve.do
- Connecting from Off-Campus http://libguides.uta.edu/offcampus
- Ask A Librarian http://ask.uta.edu
## SYLLABUS GEO 1330 Global Warming, Spring 2016; Prof. A. Winguth

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. —Arne Winguth

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<td>Jan. 19, 21</td>
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<td>3</td>
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<td>Exam</td>
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<td>April 12</td>
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<td>Signature Project Due 11:59 pm Submission as pdf to Blackboard</td>
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<td>Sustainable Concepts in Transportation</td>
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