

ATOC 1060: Our Changing Environment

Section 001; Fall 2010

Course Goals

This class focuses on introducing the factors that determine the past and present climates of the Earth System. These factors include: natural internal variability of the coupled ocean/atmosphere/land/sea-ice system, variability due to natural external forcing (solar radiation and volcanic eruption), and variability caused by anthropogenic forcing (human activities). For each aspect, we will discuss the basic processes that cause climate variability and change, and examine the social, economical, political, and ecological impacts of these variations. Specific examples and lab demo will be provided to help the students to grasp the concepts and understand the mechanisms.

The overall goal of this course is to develop an appreciation and basic understanding of the factors that contribute to the complexity and diversity of the Earth system, both natural and anthropogenic; and to begin to explore the possible solutions to environmental problems and how those solutions are linked to local, regional, and global economic and political issues. Hopefully, you will leave this class with a newfound appreciation for the beauty and power of nature with an increased awareness of our changing environment.

Contact Information and Office Hours

Instructor: Professor Weiqing Han

Classroom: Duane Physics Building, G1B20

Meeting Time: TR 12:30-1:45PM

Class web site: <http://atoc.colorado.edu/~whan/ATOC1060>

Office: Duane Physics, D-349

Office Hours: Tuesday & Thursday, 2pm-3pm

e-mail: whan@enso.colorado.edu

phone: 303-735-3079

Feel free to contact me if you have any questions or concerns regarding this class. I have two regularly scheduled office hours per week and you can also contact me via e-mail or by calling my office phone number. If you need to talk to me at a time other than during my regularly scheduled office hours please e-mail or call first, to make sure that I will be in my office.

Teaching Assistant

The TA for this class is Sean Haney. He will help with grading and will be available to answer your questions about the class.

TA: Sean R. Haney

Regular office hours: Monday and Wednesdays, 11am-12noon

Location: Stadium, Gate 7, ATOC room 255-04.

Email: sean.r.haney@colorado.edu

Class web site

The class web site (<http://atoc.colorado.edu/~whan/ATOC1060>) will contain a copy of the course syllabus, an electronic version of the lecture notes, a schedule of class lectures, downloadable

homework assignments, guideline for the class project, clicker's information and honor code policies. In addition, important class announcements will be posted on the web site under Class News, so make sure to check the web site at least once per week for any important information. If you do not know how to use the web contact Information Technology Services (ITS) or the course instructor.

Textbook and materials

The required textbook for this class is *The Earth System*, Third Edition, by Lee R. Kump, James F. Kasting, and Robert G. Crane. Two copies of the textbook are available as reserve material in the Lester Library in Duane Physics Building, room G140. The lectures will primarily cover Chapters 1-6, 12, 15 and 16 in the textbook.

Clickers

You are highly recommended to purchase an iClicker for this class. These clickers are available at the bookstore, and can be used for multiple classes on campus. The clickers will be used in lectures, and grades based on your participation and answers to the clicker questions in class will be used to *improve your final course grade as a bonus*. They will not decrease your final course grade if you do not use it.

Check the class web page for more details on using clickers. **You must register your clicker for this class by following the steps at this website:** <http://www.colorado.edu/ITS/cuclickers/students/>.

Each student should only use his/her own clicker, and is not allowed to use other students' clickers to help them answer the questions when they are absent. Doing so is considered cheating and dishonest.

Prerequisites

This is an introductory course primarily, but not exclusively, for non-science majors. The prerequisite is ATOC 1050. Simple numerical evaluations and some high school algebra will be used on occasion.

Course Requirements

Students are expected to read the textbook and to attend the class lectures. The lectures will cover some, but not all of the material in the textbook, and will also present information not contained in the textbook. Exams will be based on information from the textbook, the class lectures, and the homework assignments. Lecture notes will be posted on the class web site. Students may wish to print these notes prior to a given lecture and use the printed lecture notes as an outline for taking notes during the class. ***Reading the online lecture notes is not a substitute for attending the class lectures, since these notes will only serve as an outline for the material presented in class.***

Exams

Students are required to take 2 in-class exams and the final exam. Failure to take any of these exams will result in a drastically reduced final grade. The final exam will be given on Saturday December 11th from 7:30pm to 10:00pm. The final exam will not be comprehensive, and will only cover the material after Exam 2. **The final exam cannot be rescheduled and no make-up of the final exam will be offered. Students that miss the final exam will receive a grade of zero for the exam.**

Students that need to miss one of the regularly scheduled in-class exams may take a make-up exam that will be offered on November 9, Tuesday during the regular class meeting time. The make-up exam will be a comprehensive exam covering the material from lecture 1 to lecture 18. If you will miss one of the regularly scheduled exams **you must contact the instructor prior to missing an exam if you want to take the make-up exam**. Only those students that have contacted the instructor prior to missing an exam will be allowed to take the make-up exam. If you miss more than one exam during the semester

you will receive a grade of zero on your second missed exam. The make up exam will only be offered on Tuesday November 9. If you are unable to take the make up exam at this time you will receive a grade of zero for the missed exam.

Homework Assignments

Three homework assignments will be due during the semester. These homework assignments will explore concepts covered in class in additional detail. These assignments will be posted on the class web site during the semester.

The three homework assignments will be due on Thursday Sep 16, Thursday Sep 30, and Tuesday Oct 26.

Project Assignment

The project assignment is designed to increase your awareness of our changing environment and human impact on our environment change, and to increase your familiarity with using the materials and data on the Internet. The project must be typed (printed on a computer). Handwritten project reports will be given a grade of zero. Your project will cover the following dates during the semester:

Project	Date Due	Period Covered	Number of Weeks
Project 1	November 16	Nov. 2 – 16	2 weeks

Additional guideline on the project assignment will be available on the class web site.

Assignment rules

Please turn in **hard copies** of your assignments. **Staple** your assignment if it is more than 1 page. The instructor and TA are not responsible for the missing pages if they are not stapled.

Each assignment is due at the class ending time, 1:45pm on the due date. Please drop your assignment in the box provided by the instructor, which will be in the front of the classroom. One day (24 hours) past due, there will be 10% deduction; 24-48 hours past due, 25% deduction. The assignments will not be accepted 48 hours after the due time.

The students are encouraged to work in groups on the homework questions, but each student has to hand in his/her own answer sheet. Identical homework answer sheets are not acceptable.

Grading, grade inquiry, and grade posting

Your final grade in this course will be made up of:

- Two in-class multiple-choice exams and one final exam (20% each = 60% of final grade)
- Three homework assignments (10% each = 30% of final grade)
- One project assignment (10% of final grade)

Clicker's bonus: 4% of your clicker's grade will be added to your grade as bonus

The final grade will be calculated as:

$$\text{Final grade} = [(\text{Exam average}) \times 0.60] + [(\text{Project average}) \times 0.10] + [(\text{Homework average}) \times 0.30] + [(\text{clicker grade}) \times 0.04]$$

Your final letter grade in this class will be determined from your final grade (as calculated above) and the following letter grade divisions:

A: Final grade greater than or equal to 95.0%	C: Final grade from 73.3% to 76.6%
A-: Final grade from 90.0% to 94.9%	C-: Final grade from 70.0% to 73.2%
B+: Final grade from 86.7% to 89.9%	D+: Final grade from 67.5% to 69.9%
B: Final grade from 83.3% to 86.6%	D: Final grade from 65.0% to 67.4%
B-: Final grade from 80.0% to 83.2%	F: Final grade less than 65.0%
C+: Final grade from 76.7% to 79.9%	

These grade divisions may be adjusted based on the class performance.

If you have questions about your grades of assignments or exams, please contact the TA within two weeks after they are returned to you.

We will post updates of your grades through CUlearn website.

Honor Code

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at

<http://www.colorado.edu/academics/honorcode/>

and at

<http://www.colorado.edu/policies/honor.html>

Specific guidelines regarding violations of the Honor Code as relate to ATOC 1060 can be found on the class web site under the “Honor Code Policy” link. **All students in ATOC 1060 are expected to know and understand the policies listed on both the class web site and the Honor Code web site.**

Classroom Behavior Policy

Students and faculty each have responsibility for maintaining an appropriate learning environment. Students who fail to adhere to such behavioral standards may be subject to discipline. Faculty have the professional responsibility to treat all students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which they and their students express opinions. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See polices at

<http://www.colorado.edu/policies/classbehavior.html>

and at

http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

Students with Disabilities

If you qualify for accommodations because of a disability, please submit a letter to Professor Weiqing Han from Disability Services in a timely manner (prior to the first exam) so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Willard 322, or <http://www.Colorado.EDU/disabilityservices>.

University of Colorado Policy on Discrimination and Sexual Harassment

The University of Colorado at Boulder policy on Discrimination and Harassment (<http://www.colorado.edu/policies/discrimination.html>), the University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships apply to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the ODH and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at <http://www.colorado.edu/odh>

Religious Observances

Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, please contact Professor Han at least two weeks in advance if you have a conflict with any scheduled exams or assignments due to religious obligations. See full details at http://www.colorado.edu/policies/fac_relig.html

How to succeed in this class

- . • Read the appropriate sections of the textbook before each lecture
- . • Review the online lecture notes before each lecture
- . • Attend the lectures and answer the clicker questions
- . • Complete all homework and project assignments on time and in a neat manner
- . • Read and follow the instructions on the class web site for the homework and project assignments
- . • Do not miss exams
- . • Ask for help if you don't understand the material
- . • Contact Professor Han as soon as possible if you have any questions or concern about the class
- .

Lecture, Homework, and Exam Schedule

The following is a schedule of class lectures, due dates for homework and project assignments, and exam dates. The dates for the exams are fixed and will not change (unless class is cancelled for an unforeseen reason, in which case the exam will be given on the next class date). Any changes to this schedule will be posted on the class web site under the *Class News* link. The instructor will also send a class email to inform each student. The lecture schedule, however, may subject to slight adjustment depending on the class progress.

Tuesday	Thursday
Aug 24 (Lecture 1, Introduction)	Aug 26 (Lecture 2, Ch1)
Aug 31 (Lecture 3, Ch1)	Sep 2 (Lecture 4, Ch1) Start HW1
Sep 7 (Lecture 5, Ch2)	Sep 9 (Lecture 6, Ch2,3)
Sep 14 (Lecture 7, Ch3)	Sep 16 (Lecture 8, Ch3) HW1 Due, Start HW2
Sep 21 (Lecture 9, Ch3)	Sep 23 (Lecture 10, Ch4)
Sep 28 (Lecture 11, guest TBD)	Sep 30 (Lecture 12, Ch4) HW2 Due
Oct 5 Exam 1	Oct 7 (Lecture 13, Ch4)
Oct 12 (Lecture 14, Ch4) Start HW3	Oct 14 (Lecture 15, Ch5)
Oct 19 (Lecture 16, Ch5)	Oct 21 (Lecture 17, Ch5)
Oct 26 (Lecture 18, Ch5) HW3 due	Oct 28 Exam 2
Nov 2 (Lecture 19, Ch6) Start project	Nov 4 (Lecture 20, Ch12)
Nov 9 Make-up Exam	Nov 11 (Lecture 21, Ch12)
Nov 16 (Lecture 22, Ch15) Project Due	Nov 18 (Lecture 23, Ch15)
Nov 23 No class Fall Break	Nov 25 No class Thanksgiving Holiday
Nov 30 (Lecture 24, Ch15)	Dec 2 (Lecture 25, Ch15,16)
Dec 7 (Lecture 26, Ch16)	Dec 9 (Lecture 27, Ch16)

Exam 1: Oct 5 (Lectures 1-12, HW1, HW2)	Exam 2: Oct 28 (Lectures 13-18, HW3)
Make-up Exam: Nov. 9 class time (Lectures 1-18, HW1, HW2, HW3)	Final Exam: Sat Dec 11 7:30pm-10:00pm Duane G1B20 (lectures 19-27)