Living on the Edge:
Global Climate Change and Earth History
(Geol 390)

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Office: at CCW 225L (see aerial view of building)
Course Web Page: http://www.atmosedu.com/Geol390/
Other important information related to our course is on Angel**.**

Welcome to Geology 390 Living on the Edge: Global Climate Change and Earth History. The course is a general science distribution course for non-science majors and has been specifically designed for student success. If at anytime you have any questions send me an e-mail or post your question on the General Questions Discussion forum on Angel. I am here to help guide you through your learning process.

This course meets Tuesday and Thursday from 1:25 PM to 2:40 PM. Students wanting to receive an A for this course should plan on spending 6 to 9 hours per week working through the reading, assignments, and learning activities designed for course success.

Course description

This course introduces students to Global Change Science through lecture presentations, classroom discussions, assigned readings, and activities designed specifically to complement lecture topics. The course is designed to increase student understanding and appreciation of Earth as an evolving ecosystem. Topics will include: Systems Science; The sun, atmosphere, Oceans, Solid Earth, and Biosphere; The integrated climate system; climates of the past, present and future; Ice Ages, Global Warming, and Ozone Depletion. Geology 390 fulfills 3 credits of physical [P] science for

general education requirements (GERs). It does NOT fulfill any requirements for laboratory [L] credit.

Required Materials. Text Book: The Earth System Kump, Kastings, and Crane, 3rd edition.
A calculator that adds, multiplies, and divides
Access to MS Word, Excel, and PowerPoint
or open office suite (free) [http://download.openoffice.org/]
When submitting written work save your files in MS Word .doc format (or docx) or .pdf format whenever possible. Also try to name your files without any spaces. Example *ThisFile.doc* as opposed to *This file.doc*.

Questions: Posting questions on the discussion board is a great way to go as some of your fellow classmates may have some good ideas. Sending me an e-mail directly is also a good way to get questions answered in a timely manor.

Assessment:

- 2- Exams (30%) + Final (30%): 60% for all exams
- Research Paper (15%)(See Research paper for specifics)
- All other Homework & in-class activities/ quizzes (25%)

	A (100-93%)	A- 93-90%
B+ 90-87%	B 87-83%	B- 83-80 %
C+ 80-77%	C 77-70%	
D+ 70-67%	D 67-63%	D- 63-60%
	F less than 60%	

Exams: The readings, homework, and quizzes are meant to prepare you for exams. The idea is to go back over these things to solidify your knowledge and understanding. Exam study guides include sample exam questions and should be studied.

Tentative Schedule

Week #	Chapter/Topic
1 Jan 10 &12	Ch1 Introduction and over view
2 Jan 17 & 19	Ch2 Systems / Daisy World
3 Jan 26 & 28	Ch3 Energy Balance & Greenhouse Effect
4 Jan31 &Feb 2	Ch4 The atmosphere
	Exam #1 Tuesday Feb 7
5 Feb 7 and 9	Ch5 Oceans

6 Feb 14 & 16	Hydrologic Cycle
7 Feb 21 & 23	Ch6 Cryosphere
8 Feb28&Mar1	Ch7 Plate Tectonics/ Volcanoes
9 Mar 6 & 8	Exam #2 Thursday Mar 8 (chapter 4 (water cycle) through chapter 7)
Mar 13 & 15	Spring Break
10 Mar 20 & 22	Ch 8 Carbon cycle
11 Mar 27 &29	Ch 12. Long term Climate regulation Cracking the ice age
12 Apr 3 & 5	Ch 14 The Pleistocene
13 Apr 10& 12	Energy challenges (Unit 10 Habitable Planet)
14 Apr 17 & 19	Ch15. Holocene and recent and future climate Ch 16. Impacts , Adaptation, Mitigation
15 Apr 24 & 26	Ch17. Ozone Depletion
Finals weeks	Final Exam

Overall learning objectives:

- Students will become familiar with Earth as a system and learn to communicate effectively about Earth's changing climate using an "Earth System" perspective.
- Students will learn fundamental terminology, principles, and relationships related to Earth's climate system.
- Students will make appropriate use of written, oral, and visual communication skills while communicating their understanding of concepts and issues related to the Earth's climate system.
- Students will take responsibility for your own learning.
- Develop the ability to work and think independently.
- Develop the ability to work and think within a team or larger group.
- Students learn how to create graphs (x-y scatter plots and bar graphs) and use graphs (x-y scatter plots, bar charts, and contour plots) to display or extract information related to the atmospheric sciences.
- Students develop their online skills by making extensive use of online resources to acquire information, visualize data and concepts, and analyze the behavior of simple models related to the Earth system.

- Students will analyze issues, claims, and situations related to climate change science using appropriate scientific methodology including data analysis and model simulations. They will identify information that is important to a specific problem from extraneous information and distinguish between fact and opinion.
- Students will build their understanding of the relationship between flows of energy or matter through the environment and stocks of energy or matter, Examples include the greenhouse effect, water cycle, carbon cycle, air and water pollution, and world population
- Explain the current scientific understanding of natural and anthropogenic causes of climate change and the connection with our future.

Class Policies

Each student is expected to be courteous to others and observe the rules and regulations of the college at all times.

Class Participation

Each student is expected do all class activities. The course is designed to provide scaffolding early in the quarter to build skills and knowledge needed later in the quarter. The exams will typically be based on topics that are included in readings, online videos, Powerpoint summaries , online quizzes, and labs. The University faculty and administration agree that for every one hour in class students should be spending 2 to 3 hours outside of class working on learning activities (reading, writing, homework). With this in mind, expect to spend approximately 9 to 12 hours a week on the course if you are aiming for an A grade. Don't fall behind, as it is very difficult to catch up.

It is important to maintain a safe learning environment by showing unconditional respect for others. One must be particularly careful when communicating electronically as often the written word can be perceived differently than intended. This is demonstrated by being respectful of others and their opinions, taking one another seriously, and allowing humor to be a part of the class. Entering into class discussions and asking questions is important but try to be extra courteous to others and their opinions.

Chapter Reading: Although we do not intend to cover all chapters in our text this semester we will cover many of them fairly closely so reading through these chapter is important. Use the bold terms identified through each chapter as a study guide. Whenever we plan on only covering only part of a chapter, the important bold terms from the chapter will be specified. As a general guideline for studying the material presented in a chapter: first make sure you know all these bold terms in a given chapter and concepts related to them; second browse through the review questions to see if they make sense. Feel free to ask questions in class at anytime about review questions or any other ideas presented in our text or in lecture.

Exam Policy

To assess student understanding of reading and ideas presented in class or through assignments periodic quizzes and exams will be given. No make-up quizzes are given. If a students does miss one quiz they will be given a grade based on the average of all other quiz and exam scores (including the final) for the missed quiz. If for some reason, such as a field trip or other academic or professional activity, a student must miss class, advance notice should be given to the instructor so that exams may be scheduled around such activities. Make-up exams will be given only in extreme situations and at the discretion of the instructor. Make-up exams will not be given to a student missing more than 4 classes throughout the semester. Any make-up exam will be given during the last week of classes.

Late home work will be accepted with a 10 % penalty for up to 24 hours late, 20% penalty for 24 to 48 hours late, and 50% penalty for more than 48 hours late. Homework received after it has been graded for the class will not be accepted. The extra credit option discussed below allows you to "make-up" missed assignment points. Homework will not be counted late it if is received by 11:59 PM on the due date. Homework is usually submitted through Angel.

Academic Honesty Academic honesty is required at all times. Honesty during exams is essential at all times. Copyright laws, plagiarism rules shall be observed at all times. Plagiarism is representing another's work as your own, or recycling your work and representing earlier work as new work. Plagiarism or dishonesty will not be tolerated in this course and is grounds

for failing the course. Academic integrity is the cornerstone of the university and will be strongly enforced in this course. Any student found in violation of the academic integrity policy will be given an "F" for the course and will be referred to the Office of Student Conduct. For additional information about WSU's Academic Integrity policy/procedures please contact (360) 546-9781.

Extra Credit Students will be given some opportunity for extra credit which can increase their overall grade by up to **5** percentage points. If a student is interested in developing their own extra credit activity/research project related to a particular aspect of Earth system science please talk with your instructor. Writing summaries of papers, essays or books related to Earth system science of particular interest to you are worth up to 1 % of your overall grade each. See ***Paper Summary*** for guidelines and articles or articles2 for some possible ideas. Students may also submit a YouTube video summary of the choice for up to 0.6 % extra credit (~ 6 pts). See YouTubeVideo Summary for more details. All Extra credit must be submitted by Friday April 27 for consideration.

Disability Services - Accommodations may be available if you need them in order to fully participate in this class because of a disability. Accommodations may take some time to implement so it is critical that you contact Disability Services as soon as possible. All accommodations must be approved through Disability Services, located in the Student Resource Center on the Lower Level of Student Services Center (360) 546-9138.