

UNIVERSITY OF NORTH TEXAS

GEOG 1710.004: Earth Science, Spring 2012 Syllabus

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Class: Tuesday/Thursday 3:00-4:20 ENV 130

Office Hours: Tuesday & Thursday 9:30 to 11:00, or by appointment. Please come to office hours for any questions or concerns.

Email Communication: REFER to this syllabus before you send me an email.

Course Description

The Earth is a **complex** and **interacting system** of air (atmosphere), water (hydrosphere), rock (lithosphere), and life (biosphere). This course will provide an introduction to the study of Earth and its components, and in particular to the physical and biological factors that create the biosphere in which we live. The goal of this class is to provide you with a basic, yet comprehensive, understanding of your physical environment.

Course Objectives

- To examine spatial patterns of landforms, water, vegetation, soils, and climate across the Earth's surface.
- To increase understanding of the processes that influence spatial patterns and interactions in the environment.
- To study the Earth as a complex and dynamic system, shaped by internal and external environmental processes and human activity.

Learning Outcomes

- Learn basic scientific concepts and theories from the various disciplines that make up the earth sciences (e.g., geology, geography, ecology, and hydrology).
- Identify physical features and landforms and understand the physical processes that give rise to those features.
- Understand the value and underpinnings of an Earth System Science approach
- Increase knowledge of current events shaping Earth's natural systems.

Required Text: *Geosystems: Eighth Edition*, 2012, by Robert W. Christopherson. The book includes an access code to the MasteringGeography website (<http://www.masteringgeography.com/>), which can be used to study and review material in conjunction with the textbook, lectures, and laboratory exercises.

PowerPoint presentations: Condensed PowerPoint presentations will be available on Blackboard after the material has been covered in class, *and at my earliest convenience*.

Course Expectations

Attendance and Class Participation: Students are expected to attend and participate in class.

- Attendance will be taken on a random basis during normal class lectures and will be recorded during invited guest lectures.

- You will also be graded on your participation. I will record your name when you participate. You can participate:
 - during class lectures:** by asking questions, providing comments and/or insights on material covered.
 - during my office hours:** by talking to me directly about aspects you find interesting, concepts that are fuzzy, or anything else related to the class;
 - via email:** by sending me an email with questions, a cool news feature, video, photograph, or other snippet of information that I can use in an upcoming lecture.

Required Reading: Read the assigned textbook chapter(s) as well as the assigned **brief** news article relevant to the lecture. The quizzes and exams will contain questions from the articles. Links to the readings are at the end of this syllabus, which will be available on Blackboard.

Required Videos: We will watch short videos in class. Links to the videos are in the lecture presentations. The quizzes and exams will contain questions from the videos.

Grading:

- The lecture is worth **70%** of your final grade. You must pass the lecture part of the class to pass the course.
- Your lecture grade is based on the following:
 - Attendance & class participation – 10%
 - 6 multiple choice Blackboard quizzes/assignments (lowest grade dropped) - 15%
 - 3 multiple choice exams – 10% each (total 30%)
 - 1 non-comprehensive final exam – 15%
- The lab is worth **30%** of your final grade. You must be registered for and pass the lab to pass the course. Refer all lab questions to your lab instructor.

A	90-100
B	79.5-89.4
C	69.5-79.4
D	59.5-69.4
F	<59.5

Policies

Laptop/I-phone Policy: Students using laptops must sit in the last two rows of the lecture hall. Only tabs directly related to the lecture (i.e., relevant PowerPoint lecture and a word document) should be open during class. Failure to follow these rules will result in the restriction of *all* laptop use in class. Students seen using their I-phones will receive a “0” for one day’s attendance.

Exam Policy: Exams are closed book. You cannot use laptop computers, iPads, iPhones, cell phones, or any other form of technology. Students will be asked to remove their caps and hats during exams.

Make-up Exam Policy: If a student must be absent from an exam to attend a religious holiday, or due to a family obligation, please contact me **1 week in advance** of the exam date. If you are ill, please let me know by phone or by e-mail. Make-up exams will be given *only* if a written request and supporting documentation is provided. Otherwise, you will be assigned a “0”. In addition, you must see me, in person, during my office hours (or make an appointment) before you may take a makeup exam. **NO make-ups will be given for Blackboard quizzes.**

Extra Credit: The Department of Geography does not allow extra credit assignments (work not specified on a course syllabus).

Accommodations: The Department of Geography, in cooperation with the Office of Disability Accommodation, complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request before the 12th class day.

Academic Dishonesty: Students caught cheating or plagiarizing will receive a "0" for that particular assignment or exam. Additionally, the incident will be reported to the Office of Student Rights and Responsibilities for further penalty. According to the UNT catalog, the term "cheating" includes, but is not limited to: (a) use of any unauthorized assistance in taking quizzes, tests, or examinations; (b) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (c) the acquisition, without permission, of tests or other academic material belonging to a faculty or staff member of the university; (d) dual submission of a paper or project, or resubmission of a paper or project to a different class without express permission from the instructor(s); or (e) any other act designed to give a student an unfair advantage. Altering a returned test and claiming a grader or scanning machine made an error is also considered cheating. The term "plagiarism" includes, but is not limited to: (a) the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment; and (b) the knowing or negligent unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

Acceptable Student Behavior: Remember that you have agreed to follow the UNT Code of Student Conduct. "Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Center for Student Rights and Responsibilities to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc." Again, the Code of Student Conduct can be found at http://conduct.unt.edu/student_conduct.

Classroom Courtesy: Please follow these guidelines to avoid disrupting the class.

- (1) Turn off cell phones before arriving and do not text in class.
- (2) Do not arrive late or leave early (except for a bathroom break or emergency).
- (3) Do not sleep during class.
- (4) Do not work on other assignments during class.
- (5) Do not talk or whisper to neighbors (except for formal class interaction).

Tentative Course Schedule: Lecture order is subject to change at any time during the semester. Links to the articles can be found in the table below.

<u>Date</u>	<u>Topic</u>	<u>Reading</u>
Tu 1/17	Introduction – Why Geography?	
Th 1/19	Essentials of Geography (Student Conservation Association – Evan Escamilla)	Ch 1, New NASA map reveals tropical forest carbon storage
Tu 1/24	Solar Radiation & Earth's Modern Atmosphere	Ch 2-3, Acid pollution in rain decreased with emissions, long-term study shows
Th 1/26	Atmosphere & Surface Energy Balance	Ch 4, Ecosystem, vegetation affect intensity of urban heat island effect
Tu 1/31	Atmosphere & Surface Energy Balance Jan 30th - last day to drop without instructor Approval	Ch 4, Ecosystem, vegetation affect intensity of urban heat island effect
Th 2/2	Exam 1	
Tu 2/7	Atmospheric Circulation	Ch 6, Pollution from Asia circles globe at stratospheric heights
Th 2/9	Oceanic Circulation/Weather Essentials	Ch 6, Ch 8 Where will the debris from Japan's tsunami drift in the ocean?
Tu 2/14	Weather, Climate Systems & Climate Change	Ch 8, Economic cost of weather may total \$485 billion in US Ch 10, Fastest sea-level rise in two millennia linked to increasing global temperatures
Th 2/16	The Dynamic Planet	Ch 11, Flipped from head to toe: 100 years of continental drift theory
Tu 2/21	Weathering & Soils	Ch 13, Ch 18 Wind can keep mountains from growing
Th 2/23	Weathering & Soils (Guest – James Veteto)	Ch 13, Ch 18, Food for thought: Longer term sustainability of farming
Tu 2/28	Exam 2	
Th 3/1	Water & Water Resources	Ch 7, Ch 9, Lowering the boom
Tu 3/6	Water & Water Resources	Ch 7, Ch 9, Drought effects extend far beyond water restrictions
Th 3/8	Ecosystem Essentials	Ch 19, Gulf of Mexico 'dead zone' could be biggest ever
Tu 3/13	Ecosystem Essentials	Ch 19, Top 5 extreme weather events of 2011 in the U.S. from tornadoes to wildfires
Th 3/15	Biogeography (Invited Guest – Jeff Johnson)	Ch 20, American Pikas: contemporary climate change alters the pace and drivers of extinction
Tu 3/20	NO CLASSES – SPRING BREAK!	
Th 3/22	NO CLASSES – SPRING BREAK!	
Tu 3/27	Terrestrial Biomes & Land Use Change	Ch 20, Geographers predict increasing rate of Amazon deforestation - West Nile virus transmission linked with land-use patterns and "super-spreaders"
Th 3/29	Exam 3	
Tu 4/3	Tectonics, Earthquakes, Volcanism	Ch 12, Geophysicists show that crust temperature variation explains half of elevation differences in north America

Th 4/5	Mountain Systems & Mountain Building	Ch 12, Tropical rainforest and mountain species may be threatened by global warming
Tu 4/10	River Systems & Fluvial Processes (Invited Guest – Matthew Hendrix)	Ch 14, Global Rivers Observatory
Th 4/12	Arid Landscapes & Aeolian Processes	Ch 15, Earth is twice as dusty as in 19th century, research shows
Tu 4/17	Managing Arid Landscapes (Invited Guests – Irene Klaver/Melinda Levin)	Ch 15, UNT faculty members to premiere film on sustainable ranching
Th 4/19	Glacial Landscapes & Glacial Processes	Ch 17, Glaciers help high-latitude mountains grow taller
Tu 4/24	Changing Glacial Landscapes	Ch 17, Mountain glacier melt to contribute 12 centimeters to world sea-level increases by 2100
Th 4/26	Oceans & Coastal Processes	Ch 16, Ocean islands fuel productivity and carbon sequestration through natural iron fertilization
Tu 5/1	Changing Oceans & Coasts	Ch 16, Urban areas grow faster than urban population
Th 5/3	Review	

Final Exam Schedule is posted at <http://essc.unt.edu/registrar/schedule/spring/final.html>

Tuesday May 8, 1:30 to 3:30 pm in ENV 130.

Reading List

<u>Article Title</u>	<u>Web Link</u>
New NASA map reveals tropical forest carbon storage	http://www.sciencedaily.com/releases/2011/05/110531155645.htm
Acid pollution in rain decreased with emissions, long-term study shows	http://www.sciencedaily.com/releases/2011/11/111116162244.htm
Ecosystem, vegetation affect intensity of urban heat island effect	http://www.sciencedaily.com/releases/2009/12/091215173021.htm
Pollution from Asia circles globe at stratospheric heights	http://www.sciencedaily.com/releases/2010/03/100325143047.htm
Where will the debris from Japan's tsunami drift in the ocean?	http://www.sciencedaily.com/releases/2011/04/110406102203.htm
Economic cost of weather may total \$485 billion in US	http://www.sciencedaily.com/releases/2011/06/110622115322.htm
Fastest sea-level rise in two Millennia linked to increasing global temperatures	http://www.nsf.gov/news/news_summ.jsp?cntn_id=119841
Flipped from head to toe: 100 years of continental drift theory	http://www.sciencedaily.com/releases/2012/01/120104133151.htm
Wind can keep mountains from Growing	http://www.sciencedaily.com/releases/2011/03/110328162029.htm
Food for thought: Longer term sustainability farming	http://adobeairstream.com/green/food-for-thought-longer-term-sustainability-of-farming/
Lowering the boom	http://www.dentonrc.com/sharedcontent/dws/drc/localnews/stories/DRC_YE_Drilling_010b03f.html
Drought effects extend far beyond water restrictions	http://www.nytimes.com/2011/08/05/us/05ttdrought.html
Gulf of Mexico 'dead zone' could be biggest ever	http://www.sciencedaily.com/releases/2011/07/110718141618.htm
Top 5 extreme weather events of 2011 in the U.S. from tornadoes to wildfires	http://www.washingtonpost.com/blogs/capital-weather-gang/post/top-5-extreme-weather-events-2011-in-the-us-from-tornadoes-to-wildfires/2011/12/26/gIQAA4gYKP_blog.html
American Pikas: Contemporary climate change alters the pace and drivers of extinction	http://www.sciencedaily.com/releases/2011/04/110420081826.htm
1)Geographers predict increasing rate of Amazon deforestation 2)West Nile virus transmission linked with Land-use patterns and "super-spreaders"	http://www.sciencedaily.com/releases/2011/07/110714120722.htm http://www.nsf.gov/news/news_summ.jsp?cntn_id=122007&WT.mc_id=USNSF_51&WT_click
Geophysicists show that crust temperature variation explains half of elevation differences in North America	http://www.sciencedaily.com/videos/2008/0213-world_on_water.htm
Tropical rainforest and mountain species may be threatened by global warming	http://www.sciencedaily.com/releases/2008/10/081009143700.htm
Global Rivers Observatory	http://www.globalrivers.org/
Earth is twice as dusty as in 19th century, research shows	http://www.sciencedaily.com/releases/2011/01/110110055748.htm
UNT faculty members to premiere film on sustainable ranching	http://www.lewisvilleleader.com/articles/2011/03/11/lewisville_leader/news/35.txt
Glaciers help high-latitude mountains grow taller	http://www.sciencedaily.com/releases/2010/09/100915140119.htm
Mountain glacier melt to contribute 12 centimeters to world sea-level increases by 2100	http://www.sciencedaily.com/releases/2011/01/110110103731.htm
Ocean islands fuel productivity and carbon sequestration through natural iron fertilization	http://www.whoi.edu/page.do?pid=39136&tid=282&cid=55147&ct=162
Urban areas grow faster than urban population	http://environmentalresearchweb.org/cws/article/news/48050

