

Course Syllabus

Course Information

(course number, course title, term, any specific section title)

GEOS 4322 –The Earth System, Spring 2013

Wednesday 4:00 PM - 6:45 PM

SLC 2.203

Professor Contact Information

(Professor's name, phone number, email, office location, office hours, other information)

Alexander Braun, 972-883-2408, braun@utdallas.edu, ROC 2.301L, by appointment

Course Pre-requisites, Co-requisites, and/or Other Restrictions

(including required prior knowledge or skills)

Some background in geosciences and/or chemistry and/or physics and/or biology is recommended. Students majoring in any of these fields are encouraged to enroll. Junior or Senior status in the School of Natural Sciences & Mathematics is required.

Course Description

This course deals with the Earth as a system of interacting spheres - atmosphere, hydrosphere, lithosphere and biosphere. Each of these sub-systems, and their underlying sciences - physics, chemistry, biology and geology - are integrated into an understanding of the Earth as a system rather than treating the components separately. Thus, the course touches on aspects of climatology, oceanography, geology and biology as they relate to an understanding of the Earth System in a holistic way. With this knowledge it is then possible to examine how changes in sub-systems can affect other components, or the Earth as a whole.

The course content is grouped into three main topics: (1) The Biosphere, (2) Earth Systems and Climate, and (3) Selected sub-systems.

Part 1: The Biosphere

- Introduction; Solar energy
- Origin and early evolution of life
- Other evolutionary events
- Daisyworld; Snowball Earth
- Mass Extinctions
- Stable isotopes and applications
- Review

1st Exam, February 20

Part 2: Earth Systems and Climate

- Atmosphere and ocean circulation
- Water cycle; Chemical weathering
- Carbon cycle
- Climate in Earth history
- Recent climate
- Global Change

- Review
- 2nd Exam, April 17

Part 3: Selected sub-systems

- Sea-level change
- Glaciers, sea ice and ice-sheets
- Current Earth systems events

Student Learning Objectives/Outcomes

Students will become familiar with a holistic approach to understand the Earth system. Students will gain experience in comprehending coupled systems and complexity in the natural environment. The students will be able to integrate information on system input, output, forcing and interacting systems and coupled bio-chemical and physical parameters. Students will also write a 2-page report of a selected sub-system of their choice (list of sub-systems will be provided).

Required Textbooks and Materials

Lecture notes will be provided by the instructor through eLearning. Publication handouts will be provided or are available through the library.

Suggested Course Materials

The Earth System, 3rd edition, Kump, Kasting and Crane (Prentice Hall) (Note: 2nd edition is OK). This book is recommended, but not mandatory.

Assignments & Academic Calendar

(Topics, Reading Assignments, Due Dates, Exam Dates)

Two exams are scheduled as listed above. The exams will be both multiple choice and short answers. The exams will be 1 hour. The 2-page report is due by the last day of classes, May 5, 5 PM. The topic will be selected during the lecture on April 3rd. Each student must write their own report on an exclusive sub-system, no two students will have the same topic.

Grading Policy

(including percentages for assignments, grade scale, etc.)

The final grade is composed of two parts as follows:

Two exams, Feb 20, Apr 17 (37 % each) – 74 %

Report on sub-system - 26 %

Course & Instructor Policies

(make-up exams, extra credit, late work, special assignments, class attendance, classroom citizenship, etc.)

There will be NO make-up exams. If a student misses an exam for a valid reason (extended illness (doctor's note provided), military service, death in the immediate family etc.), the marks will be distributed equally among the other exams (here, exam 1 or 2 and report). If a student does not turn in the 2-page report by the deadline, it will receive zero marks. A student must inform the instructor and provide a written note within 3 days of the missed exam date.

Communication outside the classroom will be exclusively through eLearning (email, discussion forum) or during office hours.

Technical Support

If you experience any problems with your UTD account you may send an email to:

assist@utdallas.edu or call the UTD Computer Helpdesk at 972-883-2911.

Field Trip Policies

Off-campus Instruction and Course Activities

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm. Additional information is available from the office of the school dean. Below is a description of any travel and/or risk-related activity associated with this course.

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD printed publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Series 50000, Board of Regents, The University of Texas System*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391) and online at <http://www.utdallas.edu/judicialaffairs/UTDJudicialAffairs-HOPV.html>

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic Dishonesty, any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Copyright Notice

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials, including music and software.

Copying, displaying, reproducing, or distributing copyrighted works may infringe the copyright owner's rights and such infringement is subject to appropriate disciplinary action as well as criminal penalties provided by federal law. Usage of such material is only appropriate when that usage constitutes "fair use" under the Copyright Act. As a UT Dallas student, you are required to follow the institution's copyright policy (Policy Memorandum 84-I.3-46). For more information about the fair use exemption, see <http://www.utsystem.edu/ogc/intellectualproperty/copypol2.htm>

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Disability Services

The goal of Disability Services is to provide students with disabilities equal educational opportunities. Disability Services provides students with a documented letter to present to the faculty members to verify that the student has a disability and needs accommodations. This letter should be presented to the instructor in each course at the beginning of the semester and accommodations needed should be discussed at that time. It is the student's responsibility to notify his or her professors of the need for accommodation. If accommodations are granted for testing accommodations, the student should remind the instructor five days before the exam of any testing accommodations that will be needed. Disability Services is located in Room 1.610 in the Student Union. Office hours are Monday – Thursday, 8:30 a.m. to 6:30 p.m., and Friday 8:30 a.m. to 5:00 p.m. You may reach Disability Services at (972) 883-2098.

Guidelines for documentation are located on the Disability Services website at <http://www.utdallas.edu/disability/documentation/index.html>

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

These descriptions and timelines are subject to change at the discretion of the Professor.