Lecture Syllabus

Text: Physical Geology - The Science of Earth by Charles Fletcher (2011); John Wiley & Sons.
Inc. ISBN: 978-0-471-22037-4

Class Meetings: Tue/Thu 11:00 a.m. – 12:15 p.m. EN101
Office Hours: Mon and Wed 9:00 a.m. to noon, or by appointment. I encourage you to email me with any questions or concerns you may have (see email address listed above).

Course Description
Physical Geology is the branch of geology concerned with the origin, classification, and composition of Earth materials, natural geologic processes affecting and shaping our Earth (plate tectonics, earthquakes, volcanoes, global warming etc.), as well as the forces that cause those changes. This course includes laboratory studies of minerals, rocks, as well as physiographic and geologic maps.

GEOL 1403 is a required course for students majoring in Geology or Environmental Science. This course may be taken by any student with the necessary interest in the natural sciences. GEOL 1403 is part of a learning community, which includes a seminar class, for a majority of the students registered for this course. Our overarching theme of the semester is “Dig your Core”.

The seminar class will complement the Geology lecture with an opportunity for students to dig deeper into the material covered in class, as well as learning basic scientific skills required for future classes, in a smaller group setting.

Student Learning Outcomes
Upon successful completion of this course, you should be familiar with / demonstrate knowledge of:

- the composition and structure of the solid Earth,
- the theory of Plate Tectonics,
- the various rock types that make up Earth’s crust,
- the internal and external processes that shape our planet,
- the interaction between some of the main components of the Earth System.

The interdependence of science and technology and their influence on, and contribution to, modern culture.

In addition to the content knowledge the course also provides you with basic core competencies such as:

- critical thinking, e.g. when approaching topics using the scientific method
- problem solving by working collaboratively in teams
- communication skills, e.g. when presenting some of your work to the group verbally or in writing
- Empirical and quantitative skills when working with numeral data, reading graphs etc.

Please always remember that you are the one responsible for your success. I will do my best to guide you in your learning process but without YOU assuming an active role, by completing work, studying outside of class time, asking questions, making use of help offered etc. you may not successfully pass this course.

Evaluation and Grade Assignment
Your final grade will be based on a % curve from the following point distribution:

A) Exams (3@65 points each) 195 points
B) Lecture Quizzes: 5@10 points each 50 points
C) Geology in the News presentation (groups of 2 people) 25 points
D) Comprehensive Final Exam 100 points
E) Labs: 12 assignments @ 10 points each, 2 exams 250 points

Total: 620 points
A perfect score in this course would be to earn all 620 points available. There will be no curve at the end of the semester! Final grading will be as follows (100-90%=A, 90-80%=B etc.):

- A = 620-558 points
- B = 557-496 points
- C = 495-434 points
- D = 434-372 points
- F < 372 points

**Extra Credit**
You have three opportunities to earn extra credit points.

1. Turning in your completed score card (handed out at the beginning of the semester during your first lab) on the day of the final (5 points).
2. Points scored on lecture quizzes beyond the 5 quizzes counting towards your grade.
3. Class participation competition (max. 5 points per competition)

**Exams and Lecture Quizzes**
The grade you will receive for this class is based on your performance on exams, quizzes, lab exercises and class work. Missing any of these opportunities to collect points towards your point total will most likely affect your grade. So: **attend class!!** If you miss an **exam** (which includes anyone walking in more than 15 minutes late on the day of an exam!) you will be given the opportunity to make up this exam on the day of the final (after you have taken the final). It is your responsibility to contact me **within one week** of missing an exam to let me know that you wish to make up the exam. You loose the privilege of making up an exam if you fail to notify me during this time period.

**Lecture Quizzes** happen randomly and help me monitor your progress and regular attendance of the class. Quizzes will consist of a short series of multiple-choice questions to be answered in approximately 5-10 minutes usually at the beginning of the class period. Students who walk in late will not be given an opportunity to answer missed questions. If you are absent for medical reasons or a University related event, you will be given an opportunity to make up missed quizzes at the end of the semester after the final. Again, it is your responsibility to contact me regarding the make-up of missed quizzes within a week (and provide documentation). After that you loose your privilege to make up the missed work. Lecture quizzes will include material covered in previous lectures **and** from the reading assignments.

**Geology in the News**
Working in teams of two students, you will present a current geologic event to the class in the form of a poster and brief oral presentation on November 29th. Timeline for this assignment will roughly be structured as follows:

1. Choose a topic (relating to the chapters we will be covering this semester) by Sept. 6th
2. Collect “news” as it relates to your topic for one month (until Oct. 4th). You need to find at least one article per week during this month that you will incorporate into your work.
3. Prepare your poster over the course of the following month; ask for advice if needed!!!
4. Drafts of the posters are due Nov. 20th
5. Presentation day of posters is Nov. 29th. Every group will have 5 minutes to present their work to the class. Grading criteria will be given in class.

**Class and Lab Policies**
While attendance of the lectures will not be recorded by the instructor on a regular basis, regular attendance is essential to the successful completion of this course. **Regular attendance of the lab sessions is required** and there will be no make-up labs except for excused absences. You can recover a missed lab, if you know you are going to miss your section during one particular week, by arranging to attend one of the other available sections. You need to make these arrangements with the lab instructor in advance (i.e., don’t just show up and expect to be accommodated). **Each student may attend a different lab section no more than once during the semester (except for excused absences; proof required).**

Treat your co-students (and instructors) with respect. The college catalog contains the university statement on academic integrity. Cheating will not be tolerated and will result in a failing grade in the course and possible further disciplinary action by the university. **The use of cell phones, pagers, CD players, headphones and similar electronic devices is not allowed in class. I also highly recommend not using laptops in class. If you are caught using a lab top in class for any other purpose than note-taking, you will loose the privilege of bringing it to class for the remainder of the semester.**
Notice to Students with Disabilities
Texas A&M University-Corpus Christi complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. If you suspect that you may have a disability (physical impairment, learning disability, psychiatric disability, etc.), please contact the Services for Students with Disabilities Office, located in Corpus Christi Hall (CCH) 116, at 825-5816. If you need disability accommodations in this class, please see me as soon as possible.

Academic Advising
The College of Science and Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. The College's Academic Advising Center is located in Center for Instructions CI 350, and can be reached at 825-6094.

Grade Appeal Process
As stated in University Rule 13.02.99.C2, Student Grade Appeals, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at http://www.tamucc.edu/provost/university_rules/index.html. For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.

Dropping a Class
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. November 2, 2012 is the last day to drop a class with an automatic grade of “W” this term.

Reading Assignments
All reading assignments are to be read prior to the class in which the material will be discussed. It is important that you come to class prepared. Lecture quizzes will contain material from the reading assignments.
The following lecture schedule will be followed as closely as possible although some revisions may become necessary during the semester.

Important Dates

| August 23 | First class day |
| September 18 | Exam 1 |
| October 30 | Exam 2 |
| November 27 | Exam 3 |

Lecture Schedule

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<th>August</th>
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<tr>
<td>Thu 08/23</td>
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<td>Tue 08/28</td>
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<td>Thu 08/30</td>
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**Laboratory Syllabus**

**Lab Time and Place:** 341: Tue 09:00-10:50 a.m., CS 226  Gene Scotch  
340: Tue 01:00-02:50 p.m., CS 226  Gene Scotch  
103: Tue 03:00-04:50 p.m., CS 226  Gene Scotch

**Lab Material**  
Material (handouts) required to prepare yourself and to work with during the lab meetings will be posted on blackboard. It is your responsibility to print out and bring this material with you to lab. Handouts will not be provided! Also, please purchase a basic Rock and Mineral Identification book of your choosing.

**Lab Attire**  
There is no food or drink permitted in the geology lab (CS 226). You are required to wear closed-toed shoes to the lab. You are not required to wear a lab coat. ALL STUDENTS MUST SUCCESSFULLY PASS A LAB SAFETY LECTURE WHICH WILL BE GIVEN DURING THE FIRST LAB MEETING

**Lab Description**  
The laboratory exercises are intended to give you a hands-on geology experience, as well as compliment the lecture material. They will focus on three main topics: (1) plate tectonics, (2) rocks and minerals, and (3) working with topographic and geologic maps.
After the completion of these exercises, you should be able to successfully describe and identify the most common rocks and minerals found on our planet. You will also learn to recognize some of the most common rocks found in Texas. You will be given an introduction to the interpretation of topographic and geologic maps, as well as geologic cross sections.

**Lab Objectives**
Upon successful completion of the laboratory exercises you should be able to
- Describe the fundamental principles of plate tectonics
- Identify various minerals as well as basic igneous, sedimentary, and metamorphic rocks
- Read and interpret topographic and geologic maps

**Evaluation and Grade Assignment**
Your points from the lab section will be added to the points acquired in the lecture section. To successfully complete this geology course you MUST attend labs.

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Points</th>
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<tbody>
<tr>
<td>Lab Performance (quiz or assignment; 10 pts each)</td>
<td>120 points</td>
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<tr>
<td>Exam 1</td>
<td>80 points</td>
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<td>Exam 2 (Take-home; 5 points deduction/day for late work)</td>
<td>50 points</td>
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<td><strong>Total:</strong></td>
<td><strong>250 points</strong></td>
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**Important Dates**

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<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tr>
<td>Aug 28</td>
<td>Labs begin</td>
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<tr>
<td>Oct 16</td>
<td>Exam 1</td>
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<tr>
<td>Dec 04</td>
<td>Exam 2 due</td>
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**Lab Schedule**

**August**
Tue 08/28 Lab 1 Syllabus, Lab safety, Introduction

**September**
Tue 09/04 Lab 2 Plate Tectonics
Tue 09/11 Lab 3 Minerals
Tue 09/18 Lab 4 Igneous Rocks
Tue 09/25 Lab 5 Sediments, Sedimentary Structures, and Sedimentary Rocks

**October**
Tue 10/02 Lab 6 Metamorphic Rocks
Tue 10/09 Lab 7 Rocks of Texas, Introduction to Geologic Maps
Tue 10/16 **EXAM 1**
Tue 10/23 Lab 8 Topographic Maps
Tue 10/30 Lab 9 Geologic Structures and Maps 1

**November**
Tue 11/06 Lab 10 Geologic Structures and Maps 2
Tue 11/13 Lab 11 Geologic Structures and Maps 3, **EXAM 2 (TAKE HOME)**
Tue 11/20 **NO LAB**, work on take-home exam
Tue 11/27 Continue working on exam 2 in lab; TA available

**December**
Tue 12/04 Lab 12 Geology of N-America using Google Earth, **EXAM 2 DUE**
**Drafting Supplies**
The lab exercises (and partially the lectures) will require the use of some basic drafting supplies. The following is a list of what is needed. Please bring these items with you to each session.

- Mechanical pencil, lead size of 0.5 mm or finer
- Eraser
- Colored pencils (at least six colors)
- 12” ruler with mm markings
- Protractor (we can provide some)
- Calculator

**Listservs**
Listservs you may find interesting are:
- geolstu-list@sci.tamu.edu   Geology listserv
- escistu-list@sci.tamu.edu   Environmental Sciences listserv