Lecture Syllabus


Class Meetings: Tue/Tr 11:00 a.m. – 12:15 p.m., EN 108
Office Hours: Tue 2:30 to 4:30 pm, Wed 10:30 to 11:30 am or by appointment

I encourage you to email me with any questions or concerns you may have (see email address listed above).

Class Structure: There will be two lecture sessions and one lab session per week. Lectures will include electronic presentations and discussion. Please note that lectures will supplement reading assignments and not necessarily duplicate them. Therefore, it is imperative that you read your chapter assignments!

Often, themes being discussed in lecture will be addressed during lab and vice versa. Throughout the semester your progress will be monitored through both formative and summative assessment tools that include exams, quizzes and out-of-class assignments. This class is designed to be interactive and engaging. Therefore, I strongly encourage questions and discussions during class. Misconceptions will be avoided by active participation of both instructor and students. Students will be permitted for group brainstorming for certain tasks during the semester period. Balance will be maintained between learner centered and teaching centered teaching methods. Active learning process will try to be followed for Lecture Session. Students are allowed to record the class lecture, if they feel necessary. Last 10 minutes of the class may be assigned for free discussion or video watching depending on the availability of time. No diversity related biasness will be allowed in the classroom.

I encourage you to

- Buy a Geology dictionary/ Check availability in the library/ search online
- Send comments/ questions by email
- Don’t write name in your exam paper-just A number
- Don’t hesitate to send an email to the instructor if you see any kind of unconscious biasness
- Don’t depend only on the book. Power point slides are also important. The most important is to understand the concepts and apply those for any kind of relevant critical questions!

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 climate change 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. The course may be taken by any student with the necessary interest in the natural sciences.

Prerequisites: There are no prerequisites for this course. Participation in both formal and informal discussions is expected, and will be counted towards your grade. Regular use of an
University email address is required for this class.

**Student Learning Outcomes**

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

- Origin of the Earth
- 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,
- natural hazards,
- geologic resources (with special emphasis on energy resources),
- global change including climate change,
- 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 this 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:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Exams (2@60 points each)</td>
<td>120</td>
</tr>
<tr>
<td>B) Weekly Gr. Reports (12@5 points each)</td>
<td>60</td>
</tr>
<tr>
<td>C) “Snapshot” quizzes (5@10 points each)</td>
<td>50</td>
</tr>
<tr>
<td>D) Comprehensive Final Exam</td>
<td>100</td>
</tr>
<tr>
<td>E) Group Project on Geology in the News by Each Group</td>
<td>100</td>
</tr>
<tr>
<td>F) Class room Participation</td>
<td>50</td>
</tr>
<tr>
<td>F) Labs: 11 assignments @ 10 points each and 2 exams</td>
<td>250</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>730 points</strong></td>
</tr>
</tbody>
</table>

A perfect score in this course would be to earn all 730 points available. There will be no curve at the end of the semester! Final grading will be as follows (100-90%=A, 89-80%=B etc.):

- **A = >649 points**
- **B = 649-584 points**
- **C = 583-511 points**
- **D = 510-438 points**
- **F <438 points**

**Exams and Snapshot Quizzes**

Exams are closed-book and taken in person in the exam hall. If campus is closed due to an emergency or inclement weather on the day of an exam, the exam will be rescheduled. 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.
Snapshot 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 lose your privilege to make up the missed work. Snapshot quizzes will include material covered in previous lectures and from the reading assignments.

Classroom Participation
Classroom Participation will include not only your Physical presence in the class room but also your timeliness, response and interaction with instructor and your peers.

Weekly Reports
Each week you will have to submit a weekly report on your reflections of your learning of the course content. Specifically, these reports are to be about one page in length and will address the following three questions:

1. What did I learn this week?
2. Prepare at least 5 questions based on the topics completed this week.
3. What questions remain unclear?
4. If I were the professor, what questions would I ask my students to find out if they understood the material (e.g. questions or problems used for testing)?

The reports offer you the opportunity to provide constructive feedback during the course. To answer the first question, you can read your class notes and the reading assignments. The second question will reflect your understanding of the topic and critical thinking capability. The third question informs both you and me of topics that may need to be readdressed. The fourth question encourages you to identify more and less important concepts of the week and assess the level of difficulty of different questions. Submit the reports in Blackboard. Weekly reports are due no later than 11:59 pm each Sunday.

Final Report writing on Geology in the News
Each group will prepare a report on recent and interesting geologic event / discovery after 2000. Report must include
- Title
- Nature of event (e.g. volcanic eruption, earthquake, important geologic discovery…)
- Location (be sure to address geologic context, e.g. near a plate boundary etc.)
- Geologic background
- Methodology, Limitations
- Major Findings, Conclusions etc.

Please mention the group name and member of each individual group in your report and submit in Blackboard by no later than Nov 30 Midnight. Remember that it’s your group project!!!

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 instructors 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).

**Classroom/Professional Behavior**

Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. **The use of cell phones, pagers, CD players, headphones and similar electronic devices is not allowed in class. Keep these devices in your bags, not on the tables.** You may be asked to refrain from using a laptop in class. Cheating will not be tolerated and will result in a failing grade in the course and possible further disciplinary action by the university.

**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](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 15, 2013** is the last day to drop a class with an automatic grade of “W” this term.
Reading and Online 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. Quizzes may contain material from the reading assignments. Online assignments MUST be completed before coming to class. You will not be able to keep up with the pace of the class if you do not complete this work.

The following lecture schedule will be followed as closely as possible although some revisions may become necessary during the semester.

Important Dates

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept 05</td>
<td>First class day</td>
</tr>
<tr>
<td>Sept 18</td>
<td>Exam 1</td>
</tr>
<tr>
<td>Nov 05</td>
<td>Exam 2</td>
</tr>
<tr>
<td>Nov 30</td>
<td>Group project submission</td>
</tr>
<tr>
<td>Nov 28</td>
<td>Thanksgiving holiday</td>
</tr>
<tr>
<td>Dec 10</td>
<td>Last day of class</td>
</tr>
<tr>
<td>Dec 12</td>
<td>Final exam</td>
</tr>
</tbody>
</table>

Lecture Schedule

[Additional materials may be provided for few topics that are not available in the book]

September

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tr 09/05</td>
<td>Introductory Remarks, Chapter 2: Solar System</td>
</tr>
<tr>
<td>Tue 09/10</td>
<td>Chapter 1+13: An Introduction to Geology + Geologic Time</td>
</tr>
<tr>
<td>Tr 09/12</td>
<td>Chapter 3: Plate Tectonics</td>
</tr>
<tr>
<td>Tue 09/17</td>
<td>Chapter 3 cont.</td>
</tr>
<tr>
<td>Tr 09/19</td>
<td>Chapter 12: Earthquakes</td>
</tr>
<tr>
<td>Tue 09/24</td>
<td>Chapter 12 cont.</td>
</tr>
<tr>
<td>Tr 09/26</td>
<td>EXAM 1</td>
</tr>
</tbody>
</table>

October

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tue 10/01</td>
<td>Chapter 6: Volcanoes</td>
</tr>
<tr>
<td>Tr 10/03</td>
<td>Chapter 6 cont.</td>
</tr>
<tr>
<td>Tue 10/08</td>
<td>Chapter 4: Minerals</td>
</tr>
<tr>
<td>Tr 10/10</td>
<td>Chapter 4 cont., The Rock Cycle, Chapter 5: Igneous Rocks</td>
</tr>
<tr>
<td>Tue 10/15</td>
<td>Chapter 5 cont.</td>
</tr>
<tr>
<td>Tr 10/17</td>
<td>Chapter 7+18: Weathering, Mass Wasting</td>
</tr>
<tr>
<td>Tue 10/22</td>
<td>Chapter 8: Sedimentary Rocks</td>
</tr>
<tr>
<td>Tr 10/24</td>
<td>Chapter 8 cont.</td>
</tr>
<tr>
<td>Tue 10/29</td>
<td>[May Be Absent / TBA]</td>
</tr>
<tr>
<td>Tr 10/31</td>
<td>Chapter 9: Metamorphic Rocks</td>
</tr>
</tbody>
</table>

November

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tue 11/05</td>
<td>EXAM 2</td>
</tr>
<tr>
<td>Tr 11/07</td>
<td>Chapter 11: Mountain Building</td>
</tr>
<tr>
<td>Tue 11/12</td>
<td>Chapter 11 cont.</td>
</tr>
<tr>
<td>Tr 11/14</td>
<td>Oil Spills, Ethics and Society; Chapter 10: Geologic Resources</td>
</tr>
<tr>
<td>Tue 11/19</td>
<td>Chapter 10 cont.</td>
</tr>
<tr>
<td>Tr 11/21</td>
<td>Chapter 16: Global Warming</td>
</tr>
<tr>
<td>Tue 11/26</td>
<td>Chapter 16 cont.</td>
</tr>
<tr>
<td>Tr 11/28</td>
<td>Thanksgiving Holiday (no classes)</td>
</tr>
</tbody>
</table>
Laboratory Syllabus

Lab Time and Place:  
Lab103: Tue 03:00-4:50 p.m., CS 226  
Lab 102: Wed 09:00-10:50 a.m., CS 226  
Lab 104: Tr 09:00-10:50 a.m., CS 226

Lab Material  
Material (handouts) required to prepare you 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
  o Describe the fundamental principles of plate tectonics
  o Identify various minerals as well as basic igneous, sedimentary, and metamorphic rocks
  o 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 both lecture AND labs.

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

Important Dates  
Sept 10  Labs begin  
October 29  Exam 1
## Lab Schedule

### September
- **Tue 09/10** Lab 1 Syllabus, Lab safety, Basics: Math and Physics  
- **Tue 09/17** Lab 2 Plate Tectonics  
- **Tue 09/24** Lab 3 Minerals

### October
- **Tue 10/01** Lab 4 Igneous Rocks  
- **Tue 10/08** Lab 5 Sediments, Sedimentary Structures, and Sedimentary Rocks  
- **Tue 10/15** Lab 6 Metamorphic Rocks  
- **Tue 10/22** Lab 7 Rocks of Texas, Introduction to Geologic Maps  
- **Tue 10/29** **EXAM 1**

### November
- **Tue 11/05** Lab 8 Topographic Maps  
- **Tue 11/12** Lab 9 Geologic Structures and Maps 1  
- **Tue 11/19** Lab 10 Geologic Structures and Maps 2  
- **Tue 11/26** Lab 11 Geologic Structures and Maps 3, **EXAM 2 (TAKE HOME)**

### December
- **Tue 12/03** TA available to all students for Q&A Exam 2  
- **Tue 12/10** **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.tamucc.edu Geology listserv  
- escistu-list@sci.tamucc.edu Environmental Sciences listserv

---

**ENJOY THE SEMESTER...**