

**Course number and Title:** GEOL 1305                      **Environmental Geology**  
**Time:** MWF 10:30 to 11:20 am  
**Room:** BH 103

**Instructor:** Dr. Kenneth J. Tobin  
**Semester:** Spring 2012  
**Office/Phone/E-mail:** LVB 346A - X-2417 - ktobin@tamiu.edu  
**Office Hours:** MWRF 9:20-10:30 am; F 3:00 to 4:20 pm

**Description:**

A description of the structural and compositional variations that exist within the Earth's crust and upper mantle and the origin of these variations placed within the framework of Plate Tectonic Theory. Must be taken concurrently with EPSC 1103.

**Student Learning Objectives:** Upon successful completion of this course, students will be able to:

1. Use critical thinking and the scientific method to examine questions relating to atmospheric science.
2. Collaborate effectively on a research project.
3. Communicate scientific information both verbally and through written reports.
4. Review and demonstrate knowledge of fundamental earth science principles.
5. Define, quantify and communicate geological processes that alter the earth's surface.
6. Develop the ability to classify earth materials.

**Core-Curriculum Learning Outcomes:**

1. Critical Thinking: includes creative thinking, innovation, inquiry and analysis, evaluation, and synthesis of information. (SLOs: 1, 2)
2. Communication Skills: Students will demonstrate their ability to communicate effectively by using written communication. (SLOs: 3, 5)
3. Empirical and Quantitative Skills: includes the manipulation and analysis of numerical data or observable facts resulting in informed conclusions. (SLOs: 4,5)
4. Teamwork: includes the ability to work effectively with others to support a shared goal. (SLOs: 2)

**Textbooks:**

Keller, E.A. (2011) Introduction to Environmental Geology, Pearson Prentice Hall, 5th Edition

**Instruction:**

Multimedia approach, Internet assignments, lecture, class interactions, and exams

**Learning Objectives:**

Students will be able to define and discuss fundamental geologic principles.

Students will be able to identify and discuss the characteristics the components of the hydrological cycle.

Students will be able to integrate an understanding how the utilization of natural resources can impact our society.

Students will be able describe and distinguish different geohazards.

## **Policies of the College of Arts and Sciences**

**(Required on all COAS Syllabi)**

### **Classroom Behavior**

The College of Arts and Sciences encourages classroom discussion and academic debate as an essential intellectual activity. It is essential that students learn to express and defend their beliefs, but it is also essential that they learn to listen and respond respectfully to others whose beliefs they may not share. The College will always tolerate diverse, unorthodox, and unpopular points of view, but it will not tolerate condescending or insulting remarks. When students verbally abuse or ridicule and intimidate others whose views they do not agree with, they subvert the free exchange of ideas that should characterize a university classroom. If their actions are deemed by the professor to be disruptive, they will be subject to appropriate disciplinary action, which may include being involuntarily withdrawn from the class.

### **Plagiarism and Cheating**

Plagiarism is the presentation of someone else's work as your own. 1) When you borrow someone else's facts, ideas, or opinions and put them entirely in your own words, you must acknowledge that these thoughts are not your own by immediately citing the source in your paper. Failure to do this is plagiarism. 2) When you also borrow someone else's words (short phrases, clauses, or sentences), you must enclose the copied words in quotation marks as well as citing

the source. Failure to do this is plagiarism. 3) When you present someone else's paper or exam (stolen, borrowed, or bought) as your own, you have committed a clearly intentional form of intellectual theft and have put your academic future in jeopardy. This is the worst form of plagiarism.

Here is another explanation from the 2010, sixth edition of the *Manual of The American Psychological Association* (APA):

*Plagiarism:* Researchers do not claim the words and ideas of another as their own; they give credit where credit is due. Quotations marks should be used to indicate the exact words of another. *Each* time you paraphrase another author (i.e., summarize a passage or rearrange the order of a sentence and change some of the words), you need to credit the source in the text.

The key element of this principle is that authors do not present the work of another as if it were their own words. This can extend to ideas as well as written words. If authors model a study after one done by someone else, the originating author should be given credit. If the rationale for a study was suggested in the Discussion section of someone else's article, the person should be given credit. Given the free exchange of ideas, which is very important for the health of intellectual discourse, authors may not know where an idea for a study originated. If authors do know, however, they should acknowledge the source; this includes personal communications. (pp. 15-16)

Consult the Writing Center or a recommended guide to documentation and research such as the *Manual of the APA* or the *MLA Handbook for Writers of Research Papers* for guidance on proper documentation. If you still have doubts concerning proper documentation, seek advice from your instructor prior to submitting a final draft.

*Penalties for Plagiarism:* Should a faculty member discover that a student has committed plagiarism, the student will receive a grade of 'F' in that course and the matter will be referred to the Honor Council for possible disciplinary action. The faculty member, however, has the right to give freshmen and sophomore students a "zero" for the assignment and to allow them to revise the assignment up to a grade of "F" (50%) if they believe that the student plagiarized out of ignorance or carelessness and not out of an attempt to deceive in order to earn an unmerited grade. This option is not available to juniors, seniors, or graduate students, who cannot reasonably claim ignorance of documentation rules as an excuse.

*Penalties for Cheating:* Should a faculty member discover a student cheating on an exam or quiz or other class project, the student will receive a "zero" for the assignment and not be allowed to make the assignment up. The incident must be reported to the chair of the department and to the Honor Council. If the cheating is extensive, however, or if the assignment constitutes a major grade for the course (e.g., a final exam), or if the student has cheated in the past, the student should receive an "F" in the course, and the matter should be referred to the Honor Council. Under no circumstances should a student who deserves an "F" in the course be allowed to withdraw from the course with a "W."

A new grade to denote academic dishonesty is now available, a "M" for "Academic Misconduct." It has the same effect as an "F" but will indicate on the transcript that the failure was due to academic misconduct.

*Student Right of Appeal:* Faculty will notify students immediately via the student's TAMIU e-mail account that they have submitted plagiarized work. Students have the right to appeal a faculty member's charge of academic dishonesty by notifying the TAMIU Honor Council of their intent to appeal as long as the notification of appeal comes within 3 business days of the faculty member's e-mail message to the student. The *Student Handbook* provides details.

### **UConnect, TAMIU E-Mail, and Dusty Alert**

Personal Announcements sent to students through TAMIU's UConnect Portal and TAMIU E-mail are the official means of communicating course and university business with students and faculty – not the U.S. Mail and not other e-mail addresses. Students and faculty must check UConnect and their TAMIU e-mail accounts regularly, if not daily. Not having seen an important TAMIU e-mail or UConnect message from a faculty member, chair, or dean is not accepted as an excuse for failure to take important action. Students, faculty, and staff are encouraged to sign-up for *Dusty Alert* (see [www.tamiau.edu](http://www.tamiau.edu)). *Dusty Alert* is an instant cell phone text-messaging system allowing the university to communicate immediately with you if there is an on-campus emergency, something of immediate danger to you, or a campus closing.

### **Copyright Restrictions**

The Copyright Act of 1976 grants to copyright owners the exclusive right to reproduce their works and distribute copies of their work. Works that receive copyright protection include published works such as a textbook. Copying a textbook without permission from the owner of the copyright may constitute copyright infringement. Civil and criminal penalties may be assessed for copyright infringement. Civil penalties include damages up to \$100,000; criminal penalties include a fine up to \$250,000 and imprisonment.

### **Students with Disabilities**

Texas A&M International University seeks to provide reasonable accommodations for all qualified persons with disabilities. This University will adhere to all applicable federal, state, and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal education opportunity. It is the student's responsibility to register with the Director of Student Counseling and to contact the faculty member in a timely fashion to arrange for suitable accommodations.

### **Incompletes**

Students who are unable to complete a course should withdraw from the course before the final date for withdrawal and receive a "W." To qualify for an "incomplete" and thus have the opportunity to complete the course at a later date, a student must meet the following criteria:

1. The student must have completed 90% of the course work assigned before the final date for withdrawing from a course with a "W", and the student must be passing the course;
2. The student cannot complete the course because an accident, an illness, or a traumatic personal or family event occurred after the final date for withdrawal from a course;
3. The student must sign an "Incomplete Grade Contract" and secure signatures of approval from the professor and the college dean.
4. The student must agree to complete the missing course work before the end of the next long semester; failure to meet this deadline will cause the "I" to automatically be converted to a "F"; extensions to this deadline may be granted by the dean of the college.

This is the general policy regarding the circumstances under which an "incomplete" may be granted, but under exceptional circumstances, a student may receive an incomplete who does not meet all of the criteria above if the faculty member, department chair, and dean recommend it.

### **Student Responsibility for Dropping a Course**

It is the responsibility of the STUDENT to drop the course before the final date for withdrawal from a course. Faculty members, in fact, may not drop a student from a course.

### **Independent Study Course**

Independent Study (IS) courses are offered only under exceptional circumstances. Required courses intended to build academic skills may not be taken as IS (e.g., clinical supervision and internships). No student will take more than one IS course per semester. Moreover, IS courses are limited to seniors and graduate students. Summer IS course must continue through both summer sessions.

### **Grade Changes & Appeals**

Faculty are authorized to change final grades only when they have committed a computational error, and they must receive the approval of their department chairs and the dean to change the grade. As part of that approval, they must attach a detailed explanation of the reason for the mistake. Only in rare cases would another reason be entertained as legitimate for a grade change. A student who is unhappy with his or her grade on an assignment must discuss the situation with the faculty member teaching the course. If students believe that they have been graded unfairly, they have the right to appeal the grade using a grade appeal process in the *Student Handbook* and the *Faculty Handbook*.

### **Final Examination**

Final Examination must be comprehensive and must contain a written component. The written component should comprise at least 20% of the final exam grade. Exceptions to this policy must receive the approval of the department chair and the dean at the beginning of semester.

**Lecture Schedule:****NOTE: April 13 is the last day to drop the class**


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<b>Lecture Section One – Water (Processes, Hazards, and Resources)</b>		
Date	Lecture Topics	Text Reading
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Jan 18	Introduction	
Jan 20	Overview of the Hydrological Cycle	Chp. 13
Jan 23	Geohazard - Flooding I	Chp. 9
Jan 25	Geohazard - Flooding II	Chp. 9
Jan 27	Geohazard - Drought	TBA
Jan 30	Groundwater	Chp. 13
Feb 1	Water Resources	Chp. 13
Feb 3	Laredo's Search for a Secondary Water Source	TBA
Feb 6	<b>Exam Review</b>	
Feb 8	<b>EXAM #1</b>	

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<b>Lecture Section Two – Other Earth Processes and Hazards</b>		
Date	Lecture Topics	Text Reading
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Feb 10	Geohazard – Mass Movement	Chps. 5, 10
Feb 13	Geohazard – Coastal Hazards	Chp. 11
Feb 15	Overview of Plate Tectonics	Chp. 2
Feb 17	Overview of Plate Tectonics	Chp. 2
Feb 20	Geohazard – Volcanoes	Chp. 8
Feb 22	Geohazard – Volcanoes	Chp. 8
Feb 24	Geohazard – Earthquakes	Chp. 6
Feb 27	Geohazard – Earthquakes	Chp. 6
Feb 29	Extraterrestrial Hazards	Chp. 12
Mar 2	Geohazard –Tsunami	Chp. 7
Mar 5	<b>Exam Review</b>	
Mar 7	<b>EXAM #2</b>	

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<b>Lecture Part Three - Resource Extraction</b>		
Date	Lecture Topics	Text Reading
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Mar 9	Soil Resources	Chp. 17
<b>Week of March 12 - No Classes - Spring Break</b>		
Mar 19	Mineral Resources	Chps. 3 & 15
Mar 21	Fossil Fuels - Oil	Chp. 16
Mar 23	Fossil Fuels - Natural Gas and Methane Hydrate	Chp. 16
Mar 26	<b>No Class - Work on Energy Consumption - Exercise (Due April 4)</b>	
Mar 28	Fossil Fuels - Coal	Chp. 16
Mar 30	Alternative Energy Resources	Chp. 16
Apr 2	Nuclear Waste Disposal	Chp. 16
Apr 4	<b>Exam Review</b>	

Apr 6      **NO CLASS - EASTER HOLIDAY**  
Apr 9      **EXAM #3**

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<b>Lecture Part Four - Human Interactions with the Environment</b>		
Date	Lecture Topics	Text Reading
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Apr 11	Solid Waste Disposal	TBA
Apr 13	Indoor Air Pollution: Asbestos, Radon, etc.	TBA
Apr 16	Water Quality & Pollution	Chp. 14
Apr 18	Acid Rain and Geology	Chp. 14
Apr 20	The Greenhouse Effect and Global Warming	Chp. 18
Apr 23	The Climate Change Debate	Chp. 18
Apr 25	Ozone Depletion	TBA
Apr 27	<b>Evaluating Your Personnel Carbon Footprint - Exercise (Due April 30)</b>	
Apr 30	<b>Review for Final</b>	
May 9	<b>Final Exam</b>	<b>@ 8:00 am</b>

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<b>Evaluation of Students:</b>	<b>Total</b>
Three Exams and Final Exam (each 18% with highest grade counted twice)	90%
Energy Consumption Exercise	5%
Carbon Footprint Exercise	5%

NO MAKE-UP EXAMS WILL BE GIVEN UNLESS PRIOR PERMISSION IS OBTAINED  
LATE EXERCISES WILL BE PENELIZED 10% PER EACH DAY LATE

Student grade will be determined based on the following scale

A	90%	to	100%
B	80%	to	89%
C	70%	to	79%
D	60%	to	69%
F	<60%		

THIS SYLLABUS IS MINOR SUBJECT TO CHANGES