GG 170 Physical Geology CRN 75826

Syllabus

Instructors	
Professor: Julia E. Hammer	
Office: POST 617B	

Phone/ voicemail: 956-5996 Office Hour: TBA Please contact me whenever you have questions. If you cannot come to the office hour, please make an appointment, email, call, or stop by my office.

TA: Erin Diurba Office: POST 842C Phone/ voicemail: 956-9544 Office Hour: TBA

Classrooms and Meeting Times

lecture: POST 723 9:30-10:20 M,W,F lab: POST 706 1:30-4:20 W

Course Description

An understanding of geological processes is essential because the Earth's physical systems are closely linked to biological (including human), atmospheric, and hydrologic (water) systems, and geologic processes therefore profoundly influence life on Earth. This course will introduce you to the physical geologic processes that have created and shaped the Earth for the past 4.6 billion years. A major theme of the class is the fundamental role of plate tectonics in the evolution of the planet: the movement of plates affects everything from the origin of continents and ocean basins to global climate.

A main objective of the course is to give you a better understanding of your physical environment on a local to global scale. Ideally, the things you learn will help you make decisions about where and how you live (Should you buy that house near the shore? How dangerous is it to live on a volcano? Why are there earthquakes in California but not Iowa?), and to have more informed opinions about current geopolitical issues (What are the likely effects of global warming? Why do some places have oil and others don't? Is groundwater safe to drink?).

We will telescope in from broad generalities to narrow focus on a range of scales. (1) course scale: after establishing some fundamental concepts in geoscience, we will begin the course with surface processes because we are most familiar with this part of the Earth. After observing surficial processes and systems, we will introduce the Earth's interior, how we study it, and the internal processes that result in surficial change. (2) topic scale: each topic introduced at the level that is within range of personal experience to provide a context and motivate further study, then focus on underlying physical/ chemical principles/ geologic processes.

Textbooks:

Geology, Chernicoff and Whitney (4^{th} Ed). You may also use another edition of this book. Page numbers will be assigned for the 4^{th} edition, since I don't have copies of the older books. For older editions, you can match topic headings with chapter titles to figure out the appropriate reading. The new edition available at the bookstore also comes with a student lecture notebook with illustrations from the text. You might find this helpful for note-taking, but it is not essential.

Laboratory Manual in Physical Geology, Busch (7th Ed). You must have a copy of this manual to complete the laboratory portion of this course.

Essential Materials
paper and pencil or pen
calculator
colored pencils (lab)
Course Grade
<u>Classroom</u> – $3x$ /weekly lectures with in-class and take-home exercises 20%
Labs – comprised of problem sets, demonstrations, and practice with geological
methods, students encouraged to work in groups 30%
<u>Quizzes</u> – four midterms and a final 10% each = 50%
The purposes of the reading assignments are tointroduce materialprovide a reference base
The purposes of the lecture and homework exercises are to • explain difficult concepts
• emphasize important material
• teach thinking skills through analysis of problems
• present current areas of research
• solve problems independently
• give practice working with concepts
• assess what is being learned
 The purposes of the lab are to work with geologic tools, methods, and data in a guided setting learn from each other by working in groups reinforce concepts from the reading and lecture learn and emotion absorbation and enclosing skills
· Icam and practice observation and analysis skins
The purposes of quizzes are to • assess what is being learned

Policies

Policy on Make-up Quizzes and Late assignments: Students who are traveling for official university activities (e.g., athletic events) on an exam day must provide this information to me at least one week before a quiz or exam. Make-up quizzes are available only for reasons of university travel, illness, or dire unexpected events. Make-ups for the final exam are given only in cases of severe, documented emergencies; you must have an official letter from a university administrator documenting that you were unable to attend the exam. Homework will be accepted late only with advance permission.

Policy on Scholastic Conduct: Group work is encouraged in the laboratory portion of the class, but in the lecture portion, all quizzes and the final must be completed individually. All notes, books, and electronic devices (including phones and pagers) must be out of sight during a quiz or exam. Consequences of ignoring this policy include failing the quiz/exam and referral to the Office of Student Academic Integrity for evaluation of misconduct. See the University's Student Conduct Code for more information: http://www.hawaii.edu/student/conduct/

Disabilities: If you have a documented disability, you must let me know about your situation as soon as possible (and at least one week before the first quiz) so that I can help you. Contact the Kokua Program for assistance: http://www.hawaii.edu/kokua/

Field Trips

- Wai'anae Field Trip, Sunday 9/24 with Scott Rowland's GG103 Geology of the Hawaiian Islands class
- Southeast Oahu, Saturday 10/14 with Scott Rowland
- Big Island, weekend of 11/3-11/5 with a large group of GG101 students

These trips are for those interested in seeing some local geology outside the lab and classroom, and are not required. Extra credit may be available for the lab portion of the course. Speak with Erin for details.