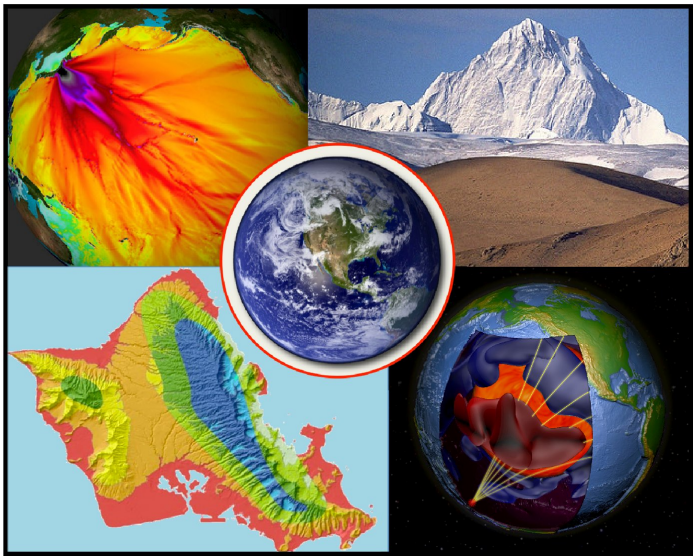
Dept. Geology & Geophysics

GG101 Spring 2014
Dynamic Earth



Instructor: **Clint Conrad**
804 POST
956-6649
clintc@hawaii.edu

Lectures: **723 POST**
TuTh 12:00-1:15

Office hours: **after class or by appointment**

Text: **Physical Geology: The Science of Earth (2011), by Charles Fletcher**

Web Site: **www.soest.hawaii.edu/GG/FACULTY/conrad/classes/GG101/GG101.html**

Planet Earth provides the land surface on which we live, and the mineral, water, and energy resources that we need for our society. These attributes of our planet are the result of geologic processes that constantly change Earth's surface and interior, and can be understood through scientific study of the composition, deformation, and transport of geologic materials. In this class we will study the dynamics of our planet by surveying landforms such as glaciers, river basins, beaches, mountains, and volcanoes, and by examining essential geologic processes such as plate tectonics, weathering, and climate change. We will discuss the impact of geologic processes on human society, as well as the effect of human activities on the global environment.

Grading:

Three Exams	50% (~17% each)	Grades will be assigned as follows:
About 20 Homeworks	50% (~2.5% each)	90-100% is A- to A; 80-90% is B- to B+; 70-80% is C- to C+; 60-70% is D- to D+

Homework Assignments: 1-2 homework assignments will be assigned weekly and will be completed online using the WileyPlus Online system. You may use your book, your notes, or any other material. Your may collaborate with other students – discussing solutions is a good way to learn. Homework assignments are not timed (you make take as long as you like), but they must be completed by the assignment date to receive full credit. Homework due dates will be posted on the website, and are typically one week after the associated class lecture. Due date extensions will NOT be given, but late homework will receive 50% credit.

Text: We will be using *Physical Geology: The Science of Earth* (2011) by Charles Fletcher. You may buy a "binder-ready" version at the bookstore, or you can buy the online version at WileyPLUS (see below). Used copies do not come with a necessary registration code.

WileyPlus: We will be using the WileyPlus Online system for all homeworks and some exams. All students must register at: www.wileyplus.com/WileyCDA
To register, use the registration code that you receive with your textbook. Make sure you register for the correct class: use "Manoa" for school, choose Conrad as instructor.

Class Schedule:

Week	Days	Lecture	Reading
Part I: Planet Earth			
1	1/14	1. Introduction	Ch. 1
	1/16	2. Solar System	Ch. 2
2	1/21	3. Planet Earth	Ch. 3
	1/23	4. Minerals	Ch. 4
3	1/28	5. Igneous Rocks	Ch. 5
	1/30	6. Weathering	Ch. 6
4	2/4	7. Sedimentary Rocks	Ch. 7
	2/6	8. Metamorphic Rocks	Ch. 8
5	2/11	Review for first Exam	
	2/13	**First Exam** (Weeks 1-4)	
Part II: Earth's Dynamic Interior			
6	2/18	9. Plate Tectonics	Ch. 3
	2/20	10. Mantle Dynamics	Ch. 3
7	2/25	11. Volcanism	Ch. 6
	2/27	12. Mountain Building	Ch. 11
8	3/4	Mountain Building, Earthquakes	
	3/6	13. Earthquakes	Ch. 12
9	3/11	14. Geologic Time	Ch. 13
	3/13	15. Earth History	Ch. 14
10	3/18	Review for Second Exam	
	3/20	**Second Exam** (Weeks 6-9)	
March 24-28		Spring Break (no class)	
Part III: Earth's Dynamic Surface			
11	4/1	16. Global Warming	Ch.10,16
	4/3	17. Global Change	Ch. 16
12	4/8	18. Glac. & Paleoclim.	Ch. 17
	4/10	19. Mass Wasting	Ch. 18
13	4/15	20. Surface Water	Ch. 19
	4/17	21. Groundwater	Ch. 20
14	4/22	22. Coastal Geology	Ch. 22
	4/24	23. Marine Geology	Ch. 23
15	4/29	24. Deserts	Ch. 21
	5/1	Review for Third Exam	
16	5/6	**Third Exam** (Weeks 11-15)	
	5/15	**Third Exam** (alternative date)	

Tips for doing well in this course:

Reading: We will be covering about 1 chapter per lecture, as posted on the schedule. Make sure to read each chapter ***before*** lecture.

Lectures: Make sure to attend ***every*** lecture! Some material important is not in the book.

Homeworks: Make sure to do ***every*** homework on time! They will help you learn the material for the exams, and missed or late homeworks really detract from your grade.

Questions: Questions are welcome and help learning. Please ask questions freely!

Learning Objectives. The Department of Geology & Geophysics has established the following undergraduate student learning objectives. All are relevant targets for the curriculum of GG101.

1. Students can explain the relevance of geology and geophysics to human needs, including those appropriate to Hawaii, and be able to discuss issues related to geology and its impact on society and planet Earth.
2. Students can apply technical knowledge of relevant computer applications, laboratory methods, and field methods to solve real-world problems in geology and geophysics.
3. Students use the scientific method to define, critically analyze, and solve a problem in earth science.
4. Students can reconstruct, clearly and ethically, geological knowledge in both oral presentations and written reports.
5. Students can evaluate, interpret, and summarize the basic principles of geology and geophysics, including the fundamental tenets of the sub-disciplines, and their context in relationship to other core sciences, to explain complex phenomena in geology and geophysics.

Disability Access

If you have a disability and related access needs the Department will make every effort to assist and support you. For confidential services students are encouraged to contact the Office for Students with Disabilities (known as "Kokua") located on the ground floor (Room 013) of the Queen Lili'uokalani Center for Student Services:

KOKUA Program; 2600 Campus Road;
Honolulu, Hawaii 96822
Voice: 956-7511; Email: kokua@hawaii.edu;
URL: www.hawaii.edu/kokua