GG 101: Dynamic Earth

General Information

*IMPORTANT:* Please review other course resources in the *Table of Contents* to the left.

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Course Description

Welcome

Geology is the study of the planet Earth and the processes that shape it through time. Geologists work and study in the lab and in the field; the natural world is their classroom. Exciting and relevant areas of research and study in the field of geology include, but are not limited to:

- Minerals
- Rocks
- Soil
- Earth’s Interior
- Plate Tectonics
- Earthquakes
- Volcanoes
- Mass Movement
- Special Topics in Geology

Course Goals
This course consists of sixteen modules covering the following concepts. Each module will last approximately one week. Additionally, more specific objectives will be provided during the course for each module:

**Module 1** – Provides an introduction to geology as a science.
**Module 2** – This module introduces you to minerals, the basic component of rocks.
**Module 3** – This module continues to discuss minerals, the basic component of rocks.
**Module 4** – This module discusses the rock cycle and the different types of rocks.
**Module 5** – This module covers the three different types of rocks; Igneous, Sedimentary, and Metamorphic.
**Module 6** – This module covers the basics of weathering, which includes the production of soils.
**Module 7** – This module involves an exam study session and Exam #1.
**Module 8** – This module covers the Mythologies of the formation of Hawai‘i.
**Module 9** – This module covers the structure of the Earth’s interior.
**Module 10** – This module discusses the basics of Plate Tectonics.
**Module 11** – This module covers Volcanics.
**Module 12** – This module covers the crustal deformation of the Earth.
**Module 13** – This module covers Earthquakes.
**Module 14** – This module covers the Special Topics Presentation.
**Module 15** – This module covers mass movement including landslides and other spectacular natural catastrophes!!!
**Module 16** – This module includes the Final Class Presentation.

At the end of this class, students will be able to:

- be able to identify and classify common rocks and minerals.
- understand how geologic resources form, how they are used, and the differences between renewable and nonrenewable resources.
- understand plate tectonics and its central role as the unifying theory of geology.
- be able to articulate the relationship between volcanoes, earthquakes, and mountain belts and tectonic plate boundaries.
- understand the scientific process and scientific basis for geologic interpretations.

**Course Readings and Resources**

**Textbooks:**

**Required:** This course uses a free geology textbook. See the [Geology Open Text Module Link](#).
Learning resources:

Lectures: Any additional lectures will be posted in the Syllabus below and the Weekly Module Resources page.

Course Communication

News and Announcements

The News and Announcements Forum, linked under the Course Communication Center module on our course's home page, serves as a way for me to make announcements within our virtual learning environment. All students are automatically subscribed to this forum and will receive a duplicate email of each message posted within it.

Discussion Forum

The discussion forum will be used for the submission of some assignments and for communication with other class members on topics of interest to the whole class. In some cases you will be asked to discuss assignments and translation approaches and techniques that you have used for your language pair and compare them to what others have done. You may also be asked to discuss how you have approached such issues as cultural problems and how you have overcome them so that other students in the class can benefit. All forums are public. Therefore, whatever is posted can be seen by everyone in the course. If you want to send a private message, use email.

Email

Course participants can also use email to communicate with me, group members, and each other privately. Please copy me on all communications using email so that I can keep up on what's going on.

Course Schedule

<table>
<thead>
<tr>
<th>Module</th>
<th>Topics</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Orientation</td>
<td>Course Introduction</td>
<td>Syllabus review</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discussion #1: Introduce Yourself</td>
</tr>
<tr>
<td>Module</td>
<td>Topics</td>
<td>Assignments</td>
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<td>-------------------------------</td>
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</tbody>
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| Week 1 Module                 | Introduction to Geology | Reading: The Science of Geology  
Reading: The Nature of Science                                             |
| (January 9 - January 15)      | Minerals                | Reading: Mineral Identification  
Reading: Mineral Basics                                                      |
| Week 2 Module                 | Minerals                | Reading: Classes of Minerals  
Reading: Abundance of Elements in the Earth’s Crust  
Quiz 1: Intro to Geology + Minerals  
Discussion #2: Why minerals are important.                                  |
| (January 16 - January 21)     | Rock                    | Reading: The Rock Cycle  
Reading: Types of Rocks                                                        |
| Week 3 Module                 | Types of Rocks          | Reading: Igneous Rocks  
Reading: Sedimentary Rocks  
Reading: Metamorphic Rocks  
Quiz #2: Rocks  
Discussion #3: Minerals vs. Rocks                                              |
| (January 22 - January 28)     | Soil                    | Reading: Weathering  
Reading: Characteristics of Soil                                                |
| Week 4 Module                 | Review Weeks 1-6        | Rock Lab  
Review Session                                                              |
| (January 29 - February 5)     | Mythology of Hawaii     | Reading: Papa o Wakea  
Research a Mo‘olelo  
Special Discussion: Post a Mo‘olelo                                           |
| Week 5 Module                 | Earth’s Interior        | Reading: Inside the Earth  
Reading: Beyond Simple Layers  
Reading: The Interior of the Earth  
Quiz #3: Inside the Earth                                                       |
| (February 6 - February 12)    | Plate Tectonics         | Reading: The Basics of Plate Tectonics  
Reading: The Theory of Plate Tectonics                                        |
| Week 6 Module                 | Volcanics               | Reading: Volcanic Eruptions  
Reading: Types of Volcanoes  
Reading: Basics of Volcanos                                                    |
<p>| (February 13 - February 19)   |                         |                                                                            |
| Week 7 Module                 |                         |                                                                            |
| (February 20 - February 26)   |                         |                                                                            |
| Week 8 Module                 |                         |                                                                            |
| (February 27 - March 5)       |                         |                                                                            |
| Week 9 Module                 |                         |                                                                            |
| (March 6 - March 12)          |                         |                                                                            |
| Week 10 Module                |                         |                                                                            |
| (March 13 - March 19)         |                         |                                                                            |
| Week 11 Module                |                         |                                                                            |
| (March 20 - March 26)         |                         |                                                                            |</p>
<table>
<thead>
<tr>
<th>Module</th>
<th>Topics</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring Break (March 27 - April 2)</td>
<td>Extra Credit</td>
<td>Watch a geology/dynamic earth related movie (10 pts) Give a 2 paragraph summary.</td>
</tr>
</tbody>
</table>
| Week 12 Module (April 3 - April 9) | Crustal Deformation | Quiz #4: Plate Tectonics & Volcanoes  
                                             Reading: Stress in the Earth's Crust  
                                             Reading: Stress and Strain              |
| Week 13 Module (April 10 - April 16) | Earthquakes      | Reading: The Nature of Earthquakes  
                                             Reading: Earthquakes                      |
| Week 14 Module (April 17 - April 23) | Earthquakes      | Earthquake Lab  
                                             Discussion #4: What about Tsunamis          |
| Week 15 Module (April 24 - April 30) | Mass Movement    | Reading: Erosion and Deposition by Gravity  
                                             Reading: Landslides Types and Processes   |
| Week 16 Module (May 1 - May 7)      | Special Topic Presentation | Class Presentations                                                         |
| Finals                  | Finals           | Quiz #5: Crustal Deformation & Earthquakes  
                                             Discussion #5: Overall Impressions (including : |

*(Note: reading/writing assignments should be completed on the date listed in the course calendar.) This calendar is subject to change. Students are expected to make note of any changes made.*

- 01/17/2017 Last day to drop (No "W" on transcript)
- 01/18/2017 Last day to receive 100% tuition refund
- 01/30/2017 Last day to receive 50% tuition refund
- 03/10/2017 Last day to withdraw from class ("W" on transcript)

**Course Requirements**

- **Quizzes (100 points total- 20 points for each quiz).** The student will complete 5 online quizzes to assess their comprehension of course materials (the lowest three quiz scores will be dropped). The quizzes will be based on the lectures and assigned reading for the previous week. Although the quizzes are open-book, they are timed ( As such, students who have not studied can expect to do poorly on the quizzes.**
• **Discussion Forum: (150 points total- 30 points for each activity).** The student will complete five discussion board assignments on selected topics from the course text. The purpose of these assignments is to facilitate open discussion of course topics between students in the class. For discussion boards, you will be required to post a response based on the prompt posted by your instructor. The topics for each discussion board will be posted on the course website.

Students are asked to respond to assignment discussion topics with thoughtful commentary, incorporating readings and other class materials into their posting. Students are required to respond to at least two other posts by their classmates.

• **Special Discussion: (75 points total).** Each student will start a discussion on a Hawai’ian mythology (Mo’olelo) that is related to geology. You may record yourself talking story and post it in lieu of a written submission. Please choose an interesting Mo’olelo that will inspire us all!!! Please feel free to go Hale La’akea library and check out the Hawai’ian collection!!

• **Presentation: (100 points total).** The student will provide a 5 minute talk on a predetermined topic in Geology. This topic will be assigned by the instructor by the November 22nd class.

• **Participation: (75 points total).** Just participate!! Easy 75 points~

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**Netiquette**

The best possible experience in discussion forums and in e-mail exchanges occurs when respect is shown to all participants. When addressing other people on the discussion forums, think about the impact of your words and remember that unlike face-to-face communication, those you communicate with cannot see the expression on your face or hear the intonation in your voice.

Try to be brief and to the point. Answer questions but do not be drawn into arguments. The discussion forum is not the place for political arguments or for discussion of inappropriate topics.

If you cite someone else’s ideas, make sure to give them credit.

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**Peer Feedback**

Collaborative learning is a part of this course. Students are expected to provide quality feedback to their peers. Some of the ways that this can be done in this course include the following:

• Be nonjudgmental and provide specific examples if discussing the work of someone else
• Cite examples from your own work or cite other research as a way to make your point
• Make suggestions that are easy to understand and make sense. Suggest specific processes that a person might use to solve a particularly difficult problem.
Grading

Grade breakdown will be as follows:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Occurrences</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>5 x 20 points</td>
<td>100</td>
</tr>
<tr>
<td>Discussion Board</td>
<td>5 x 30</td>
<td>150</td>
</tr>
<tr>
<td>Special Discussion</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>Presentation</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Participation</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>500</strong></td>
</tr>
</tbody>
</table>

Calculation of grade: The final letter grade for this course will be determined on the basis of the total number of points and will follow the normal University of Hawaii grading system. Thus, the letter grade is determined by the percentage of points accumulated, based on the following scale:

- **A** - 90%-100% (450-500 points)
- **B** – 80%-89% (400-449 points)
- **C** – 70%-79% (350-399 points)
- **D** – 60%-69% (300-349 points)
- **F** – 0-59% (<300 points)

*Please note that “N” grades are not given for this course*

Grades may be curved at the instructor’s discretion; however, the student should use the above grading scale to evaluate their performance throughout the class. If you miss an examination because of an illness or legitimate emergency, you must contact the instructor **within 48 hours** to arrange a time to take a make-up exam. The instructor will request that the student present evidence of the illness or emergency that caused the student to miss the exam. While make-up exams will cover the same content area as a missed exam, the exam format and specific questions may be different. **No retests will be given for any reason.**

Attendance and Class Preparation Policy
This is an online class and students are expected to keep pace with module assignments. Students are required to complete reading and writing assignments by the posted deadlines, and interact with the instructor and other members of this online class using the delivery platform with professionalism. There will be no make-up work. As in real life, no assignments will be accepted late. In case of illness or other serious emergencies, please provide documentation and notify the instructor by e-mail. **Students may not stop and restart the class.**

**Please read the University of Hawaii Policies on Academic Integrity**

See the E7.208 University of Hawaii Systemwide Student Conduct Code

The UH Student Conduct Code shall apply to conduct that occurs on UH premises, at UH sponsored activities, in distance/on-line courses and events, and to off-campus conduct that affects the UH Community and/or the pursuit of its objectives. Each student shall be responsible for his/her conduct from the time of application for admission through the actual awarding of a degree.

**Additional Information**

**STUDENT RESPONSIBILITIES**

The student is expected to view all lectures, participate in all course activities, and complete all examinations and course assignments **on time**. Any changes in the course schedule, such as examination dates, deadlines, etc., will be announced ahead of time on the course website or by UH email. **Students should check their UH email address regularly (at least every 48 hrs.) so that they can be informed of course changes in a timely manner.** It is the student's responsibility to be informed of these changes. It is also the student's responsibility to be informed about deadlines critical to making registration changes (e.g., last day for making an official withdrawal).

**HOW TO SUCCEED IN THIS CLASS**

Although you can download all lecture outlines and course materials, you will not succeed in this class without reading your textbook and taking detailed notes. Merely reading the chapter will not suffice. **Science courses at WCC generally require a minimum of three hours of independent study time for each hour in class.** It is your responsibility to allocate the appropriate amount of time needed for study and be realistic about all personal and professional commitments that may cut into your study time.

**ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES**

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale ‘Akoakoa 213 for more information.