GG 300: Volcanology

Syllabus/Course Contents

Spring 2020  
Bruce Houghton: phone (95)6-2561

Times:  T,R  10:30-11:45 pm  bhought@soest.hawaii.edu

Place:  POST 708  3 credits
Office Hours:  Tuesday 9:00 –10:00 am

Objectives:
- Introduce the fundamental physical processes & concepts of volcanology
- Illustrate the impacts of volcanoes on communities
- Develop scientific research, problem-solving, and critical thinking skills
Content:
This course spans the range of physical approaches to eruption processes and the sociology of volcanic crises. It has a strong field emphasis, which focuses on characterizing eruption products of a range of time and length scales. In particular we will chart the 2014-15 and 2018 eruptions of Kilauea.

The course will involve lectures, several laboratories using analog experiments, 2 field trips, videos and student participation in giving a presentation. Modules include: the rheology and transport of magma; quantitative models for intensity and style of explosive eruptions; transport and emplacement of lava flows with an emphasis on the 2018, 2014-15, 1959, 1969 and July 1974 Kilauea eruptions; origins and characteristics of pyroclasts and pyroclastic deposits; integrated monitoring of active volcanoes, evaluation and impacts of volcanic hazards and volcanic crises.

Course characteristics
- One field trip on Oahu (1 day) and one on the Big Island (2 or 3 days), students must attend (preferably all) or do substitute homework projects.
- One group research project linked to crisis management and eruption response.
- Four homework assignments, one final examinations, numerous on-line quizzes.

Field trips:

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<thead>
<tr>
<th>trip</th>
<th>topic</th>
<th>venue</th>
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<tbody>
<tr>
<td>1</td>
<td>Kilauea volcanology</td>
<td>Kilauea</td>
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<tr>
<td>2</td>
<td>explosive eruptions and deposits</td>
<td>Lanai Lookout</td>
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Reading:

We will use the text more as a supplementary reference than as a guide for the course; we will not spend much class time regurgitating the information in the text; specific chapters or parts-chapters will be assigned, not necessarily in the order in the book. I will make the volume available to you as a pdf.

Prerequisites:
100 level geology and basic sciences (math or phys or chem), 200/300 level mineralogy/petrology/earth materials, or permission of instructor.

Other class requirements
- Use of e-mail and the world-wide-web: As a student at UH, you are entitled to an e-mail account. We will use e-mail via Laulima as an auxiliary means of communicating with
each other outside class time. We will also be using WWW resources for our projects and homework.

- **Field trip attendance:** The Oahu field trip will be on either Saturday or Sunday and will last 5-6 hours. There will be a 2- or 3-day field trip on the Big Island. Two homework exercises and 25% of your final grade will be based on the field trips- if you are unable to attend other work will be required instead. It will be VERY hard to maintain comparable progress with your classmates if you are unavailable to participate in the field trips.

- **Assignments turned in on time:** Assignments must be turned in at the beginning of class on the designated day. **Unjustified late assignments will receive one grade-step lower.** The only exceptions will be pre-arranged absences or verified illness.

- **Attendance:** Because we will be doing project work, attendance will be mandatory for this class. If you know you will miss a day because of scheduled travel or another reason, **please let me know in advance.** There will be no make-up tests except by prior arrangements with me.

The University of Hawai‘i is committed to providing a learning, working and living environment that promotes personal integrity, civility, and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking. If you or someone you know is experiencing any of these, the University has staff and resources on your campus to support and assist you. Staff can also direct you to resources that are in the community. Here are some of your options:

**As members of the University faculty, your instructors are required to immediately report any incident of potential sex discrimination or gender-based violence to the campus Title IX Coordinator.** Although the Title IX Coordinator and your instructors cannot guarantee confidentiality, you will still have options about how your case will be handled. Our goal is to make sure you are aware of the range of options available to you and have access to the resources and support you need.

If you wish to remain ANONYMOUS, speak with someone CONFIDENTIALLY, or would like to receive information and support in a CONFIDENTIAL setting, use the **confidential resources available here:**

http://www.manoa.hawaii.edu/titleix/resources.html#confidential

If you wish to directly REPORT an incident of sex discrimination or gender-based violence including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence or stalking as well as receive information and support, contact: Dee Uwono Title IX Coordinator (808) 956-2299 t9uhm@hawaii.edu.

**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: http://www.hawaii.edu/kokua