GG631: Geophysics - Solid, Fluid & Wave Mechanics  
Fall 2018

Instructor: Bridget Smith-Konter  
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Meeting Time: T/Th 1:30-2:45pm  
Room: POST 702  
CRN: 87041

Course scope: The solid Earth deforms over a wide range of length scales, locations, and time scales, and in a variety of different ways in response to different forcing mechanisms. In this class, we will study continuum mechanics in geophysics, as applied to the deformation of Earth materials (elastic, viscoelastic, and plastic deformations) and seismic wave propagation (body waves, surface waves, anisotropy, and attenuation). Topics to be covered may include tensors, stress and strain in solids, rock failure, moment tensors, elasticity, ductile rheology, viscous flow, equations of motion & boundary conditions, the vector wave equation, wave field energy, reflection and transmission of seismic waves, and surface waves.

Class Notes:
Physics of Earth Materials, Agnew & Fialko (AF)

Recommended Texts:
Geodynamics, Turcotte & Schubert (TS)  
Intro to Cont. Mech, Lai, Rubin, & Krempl (Lai)  
Intro to Seismology, Shearer

For the first section of this course, we will be using a thorough set of class notes provided by D. Agnew and Y. Fialko (AF), Physics of Earth Materials. These notes will be distributed electronically to you. For the later sections of the course, we will be reviewing sections of Introduction to Seismology, by P. Shearer. The above textbooks are not required. We will further discuss textbook usage in class. Additional handouts and resources will be used throughout class.

Grading and Assignments
Homework assignments will be assigned approximately weekly, and students will periodically be required to present lecture material in class. The relative weightings of homework assignments and in-class presentations are as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Homework</td>
<td>70%</td>
</tr>
<tr>
<td>Class Presentations</td>
<td>30%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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Cooperation: Collaboration is encouraged in order to discuss approaches to solving problems. However, do not copy answers to problem sets – work out the solutions yourself.

GG Student Learning Objectives: This course will introduce students to the following GG Department Student Learning Objectives (SLOs) for a M.S. degree: (1) Technical knowledge; (2) Scientific method; (3) Communicate geological knowledge. This course will introduce students to the following GG Department Student Learning Objectives (SLOs) for a Ph.D. degree: (1) Technical knowledge; (2) Expertise in a sub-discipline; (3) Scientific method; (4) Communicate geological knowledge

Student Conduct and Academic Integrity:
University guidelines for acceptable student conduct are very specific and will be strictly followed. Please read the guidelines (http://www.catalog.hawaii.edu/about-uh/campus-policies1.htm) and contact your instructor if you have any concerns. Fundamentals:

- Cheating, of any form, will not be tolerated.
- Blind copying of intellectual material (text) from resources such as books, journals, and the internet is plagiarism and is illegal. Instead, you should write things in your own words with a proper reference to your source. If any homework exercises require you to look up an answer in something else than a class textbook, I will expect you to reference the source and write it in your own words. *Any plagiarized work will receive “0” for the whole assignment and cannot be re-done or made up*

Title IX
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.