

GEO103: EARTHQUAKES, VOLCANOES, AND OTHER HAZARDS

Syllabus Spring 2014

Lectures: Jadwin Hall, room A10, MWF 10–10:50

Specific pages in Abbott will be posted prior to lecture on Blackboard, under “Lecture Notes”.

Week of Feb 3

Feb. 3. Introduction to the course

Feb. 5. What is a “natural hazard”? Meet Lusi, the mud volcano. (**Abbott Ch. 1**)

Feb. 7. Snow day

No lab week 1

Reading: Kivalina court case

Week of Feb 10

Feb. 10. Putting people in harm’s way: Population growth (**Abbott Ch. 1**)

Feb. 12. Earth’s formation, deformation, and age (**Abbott Ch. 2**)

Feb. 14. Plate Tectonics I (**Abbott Ch. 3**)

Lab 1: Introduction to Google Earth and Plate Tectonics

Reading: How we perceive and respond to risk

Week of Feb 17

Feb. 17. Plate Tectonics II/ Earthquakes and the landscape (**Abbott Ch. 3/4**)

Feb. 19. Seismic waves and seismograms (**Abbott Ch. 3**)

Feb. 21. Earthquake magnitude and intensity (**Abbott Ch. 3/4**)

Lab 2: Plate Tectonics II

Readings: Russian nuclear test(?); G.K. Gilbert’s 1883 letter to the Salt Lake City Tribune

Week of Feb 24

Feb. 24. Earthquake mechanics (**Abbott Ch. 4**)

Feb. 26. Earthquake predictions and forecasts (**Abbott Ch. 5**)

Feb. 28. Earthquake hazards mitigation (**Abbott Ch. 3/5**)

Lab 3: Seismology

Readings: L’Aquila manslaughter trial; Heaton’s wake-up call to LA

Week of March 3

Mar. 3. Seismic hazards around the U.S. (**Abbott Ch. 4/5**)

Mar. 5. Tsunami (**Abbott Ch. 8**)

Mar. 7. Japan tsunami/nuclear power plant crisis

Lab 4: Seismic risk at transform plate boundaries

Readings: Fukushima disaster

Week of March 10

Mar. 10. Landslides (**Abbott Ch. 15**)

Mar. 12. Landslides (**Abbott Ch. 15**)

Mar. 14. MIDTERM

No lab (midterm week)

Readings: S. California landslides and debris flows

BREAK WEEK

Week of March 24

Mar. 24. Magma generation in the Earth (**Abbott Ch. 6**)

Mar. 26. Introduction to volcanic hazards (**Abbott Ch. 6**)

Mar. 29. Basaltic volcanism (**Abbott Ch. 7**)

Lab 5: Volcanic risk at divergent plate boundaries

Week of March 31

Mar. 31. Plinian eruption columns and pyroclastic flows (**Abbott Ch. 7**)

Apr. 2. Lahars (**Abbott Ch. 7**)

Apr. 4. Vesuvius and Naples (**Abbott Ch. 13**)

Lab 6: Volcanic risk at convergent plate boundaries

Readings: Vesuvius and Naples

Week of April 7

Apr. 7. Floods (**Abbott Ch. 13**)

Apr. 9. Floods/Weather (**Abbott Ch. 13/9**)

Apr. 11. Weather (**Abbott Ch. 9**)

Lab 7: Stony Brook Field Trip

Readings: New Orleans and New York vs. the sea

Week of April 14

Apr. 14. Hurricanes (**Abbott Ch. 11**)

Apr. 16. Beach erosion (**Abbott Ch. 16**)

Apr. 18. Earth's habitability (**Abbott Ch. 12**)

Lab 8: Hometown Stream Analysis

Week of April 21

Apr. 21. Earth's habitability & climate change (**Abbott Ch. 12**)

Apr. 23. Ice ages (**Abbott Ch. 12**)

Apr. 25. Global Warming: What is it, and are we the cause?

Lab 9: TBA

Readings: TBA

Week of April 28

Apr. 28. Global Warming: What can we do about it?

Apr. 30. Impacts! (**Abbott Ch. 17**)

May. 2. Protecting ourselves from the fate of the Dinosaurs. (**Abbott Ch. 17**)

Lab 10: Oral presentations

Readings: Asteroid deflection