

GLY 1880: EARTHQUAKES, VOLCANOES, AND OTHER HAZARDS

Instructor: Mark Panning

Syllabus Spring 2015

Lectures: Williamson 100 (Bless Auditorium)

MWF 5th period 11:45-12:35

Contact info:

Email: mpanning@ufl.edu or through E-Learning (Canvas)

Office: 229 Williamson Hall

Preliminary Office Hours: Monday 12:50-1:40, Wednesday 1:55-2:45 (or contact me for alternate times)

Course Objectives (General Education Purpose):

1. To gain an overview of the physical geological sciences as viewed through the lens of natural hazards.
2. To get a better understanding of the concepts of risk, hazard, and vulnerability and how they affect you both day to day, and over a longer term.
3. To convey the importance of scientific and critical thinking not only to science, but to the rest of your life as well.

Grading:

10% Classroom participation (as measured by clickers... see below)

25% Exam 1 – Fri, Feb 13, in class period

25% Exam 2 – Mon, Mar 30, in class period

40% Final Exam – Group 30C, Thu, Apr 30, 12:30-2:30 pm, in Wm 100

Approximate Grading Scale:

90 or above – A

87-89 – A-

84-86 – B+

80-83 – B

77-79 – B-

74-76 – C+

70-73 – C

67-69 – C-

64-66 – D+

60-63 – D

57-59 – D-

56 or below - E

Textbook (required):

Natural Disasters, 9th Edition, P.L. Abbott

Older editions may be used as well, but page numbers will be given in the 9th Edition. The test materials will be based on lectures and the 9th Edition. Feel free to share textbooks as well.

Reading assignments in the Abbott text associated with lectures are announced via E-Learning. The reading assignments are meant to be supplementary to the class, and material will be included in the lecture that is not necessarily included in the text (and vice-versa).

Exams:

The first two exams will not be cumulative, and will only cover material included in the segment preceding the exam. Specifically, Exam I is expected to cover material in lectures from week I-VI, as well as reading material in Abbott, Ch. 2-5, while Exam II is expected to cover weeks VII-XI, and reading material in Ch. 6-11, 13-14. This, like the schedule below, is subject to change.

The final exam will be semi-cumulative. By this I mean that it will focus on material covered since the second exam (expected to include Ch. 1, 12, 15-16), although mastery of some of the basic concepts (such as the risk equation and sources of energy) will be expected, as well as some overview comparisons between the types of hazards discussed in the course.

All exams will have scheduled in-class review sessions, and review sheets will be made available prior to the exam.

If there is an unavoidable reason why you cannot be at the scheduled exam, you need to contact me to arrange a make-up exam before the scheduled exam. If you are unable to attend the exam due to illness, I will request a doctor's note.

“Extra Credit” Assignment:

In the second half of the semester, you will be given the option of completing up to 2 of 3 possible take-home projects which will take the form of a hazards-related report a few pages in length which will require independent access and assimilation of data available on the internet. If you decide to take advantage of this assignment, it will reduce the weight of the lower score from Exams I and II to 15% (rather than 25%). The remaining 10% of your grade will be based upon your score for the assignment. If 2 assignments are completed, they will further reduce the weight of the lowest exam by the same amount as the first assignment.

Classroom participation:

We will use clickers in this class to encourage active participation. The ‘score’ you get from the clickers contributes 10% to your grade but the score *does not depend on the fraction of questions you got right*. The reason for this policy is that the clicker questions are just as much a test on how well I am teaching the subject, as of your ability to absorb the material in class. The clicker questions are designed to help you prepare for questions you’ll get in the exams. The clicker score contributes 10% to your final score. For every class where you’ve answered at least 60% of the questions – right or wrong – you will receive 1 point. The maximum number of points you can receive will be capped at 30. There will be 40 lectures during the semester that include clicker questions (there will be no clicker questions during the 2 in-class exams). *This means you will be able to miss up to 10 of these lectures at no penalty, while each absence above 10 will effectively deduct 1/3 of a point from your final grade.* This should be ample allowance for any absences required due to sickness, athletic traveling, etc., so ***there will be no need to approve absences in advance, and barring exceptional circumstances, no makeup points will be given.***

Clicker options:

If you purchase a physical clicker it needs to be an i>clicker (either the standard, + or 2 models should all work), which can be purchased from the bookstore for just ~\$60 or rented for ~\$40, or online for ~\$45 at the i>clicker website. You also can use i>clicker GO on your smartphone or laptop, with a license purchased from i>clicker (\$10.00 for 6 months up to \$32.00 for 4 years).

Other Policies:

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

I will expect all students to uphold the standards of academic integrity as stated in the Student Honor Code (available through the Dean of students office at <http://www.dso.ufl.edu/sccr/honorcode.php>)

Schedule:

I. Week of Jan 5

Jan. 7. Introduction to the course

Jan. 9. Introduction to Hazards

II. Week of Jan 12

Jan. 12. Hazards need energy: How much, what kind, and from where?

Jan. 14. Energy II

Jan. 16. Plate Tectonics: How the Earth gets rid of its calories

III. Week of Jan 19

Jan. 19. MLK day; no class!

Jan. 21. Earthquakes, plate tectonics, and the landscape

Jan. 23. Seismic waves and seismograms

IV. Week of Jan 26

Jan. 26. Magnitude and intensity: The largest earthquakes

Jan. 28. Quantifying risk and hazard

Jan. 30 Probabilities and predictions

V. Week of Feb 2

Feb. 2. The San Andreas Fault I

Feb. 4. The San Andreas Fault II

Feb. 6. Global seismicity

VI. Week of Feb 9

Feb. 9. Earthquake engineering

Feb. 11. Exam review

Feb. 13. Exam 1

VII. Week of Feb 16

Feb. 16. Magma generation in the Earth
Feb. 18. Introduction to volcanic hazards
Feb. 20. Plinian eruption columns and pyroclastic flows

VIII. Week of Feb 23

Feb. 23. Spreading-center and hotspot volcanism (Jelloea demo!)
Feb. 25. Subduction volcanoes: Ruiz, Pinatubo, and the Pacific Northwest
Feb. 27. Fire

BREAK WEEK

IX. Week of Mar 9

Mar. 9. Floods I
Mar. 11. Floods II
Mar. 13. Tsunami

X. Week of Mar 16

Mar. 16. The global weather system
Mar. 18. Weather & tornadoes
Mar. 20. Hurricanes, typhoons

XI. Week of Mar 23

Mar. 23. Beach erosion
Mar. 25. Landslides/Avalanche
Mar. 27. Exam review

XII. Week of Mar 30

Mar. 30. Exam 2
Apr. 1. Population growth
Apr. 3. Natural Resources/Peak Oil

XIII. Week of Apr 6

Apr. 6. Earth's habitability
Apr. 8. Earth's habitability & climate change
Apr. 10. Ice ages

XIV. Week of Apr 13

Apr. 13. Global Warming: What is it, and are we the cause?
Apr. 15. Global Warming: What can we do about it?
Apr. 17. Impacts!

XV. Week of Apr 20

Apr. 20. Life and Death in the Cosmic Shooting Gallery
Apr. 22. Last class: final exam review

This schedule is subject to change. Lecture notes are available online through Canvas.