

**Instructor:** Dr. Ian Skilling

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**Office Hours:** M,W 3:00pm - 4:30pm

**1. Objective:** This course is designed to give graduate & advanced undergraduate students an introduction to volcanology. The main topics covered are the properties of lava and magma, volcanic landforms, and the eruption and emplacement mechanisms of volcanic products.

**2. Text Books:**

REQUIRED: "Encyclopedia of Volcanoes" by Sigurdsson et al. (*Academic Press, 2000, ISBN 0-12-643140-X*)

SUPPLEMENTAL: "Volcanology: A Planetary Perspective" by Peter Francis and Clive Oppenheimer. 2<sup>nd</sup> edition (*Oxford University Press, 2004, ISBN: 0-19-925469-9*)

**3. Lecture Times:** Friday from 8.30am – 10.50am in SRCC 214. Attendance is required at all scheduled class meetings. Please see the schedule on the web page for topics, dates and links to notes.

**4. Course Requirements:**

1. Exams: There will be two exams, which are not comprehensive. Questions will be based on material covered in the lectures and any additional assigned reading material.
2. Project: The term project will be your chance to perform a research study on a current volcano assigned by the instructor. The purpose of this four-part project (three for the undergrads) is to better understand how a volcano works and how volcanologists conduct their science. It will constitute 40% of your final grade and therefore should be given a serious effort. Over the course of the semester, each student will complete a series of parts that are detailed below. I will grade each of these and provide feedback. The final project (including the oral presentation and revised earlier sections) will be submitted in a completely digital format on **Friday December 7th**
  1. **Geologic History:** Upon beginning any geologic study of a new area (volcanic or otherwise), the first priority is to perform a complete literature search and develop a geologic history. For volcanologists, this also entails the eruptive history and (if relevant) the hazard potential. This section should be no longer than 5 typed pages (10-12 point font, double spaced, exclusive of figures). It should include a brief description of your volcano, summary of all human observations, any quantitative data available, range of compositions, eruptive products and processes, and the current state of activity/monitoring. This should serve as complete summary of your literature search (you will use this information for all subsequent sections!!). **Part #1 is due on Friday September 28th.**
  2. **Hazard Assessment:** The second part of the project is a thorough hazard assessment of your volcano. You should look at the eruptive history and impact on the local/regional/global environment as well as the present-day topography in order to evaluate the future hazards. You should be able to estimate the eruptive style, volume and products based on your geologic history and make predictions for several different "what-if" scenarios. There is no set format for this part because each volcano is different. Use your imagination and present your assessment in the

most clear, concise manner possible. This section should not exceed the length requirements of part #1, but should include maps and figures of hazard prone areas. **Part #2 is due on Friday November 2nd.**

3. **Research Proposal (*graduate students only*):** The third part of the project is designed to get graduate students thinking about how to propose and perform research. As you work your way through the first two parts, you should take note of what research has been (and is currently being) done. There will be areas that are not well understood and are potential targets of future research. This three-page proposal should be original in nature (*do not duplicate research already done!!*) and contain the following elements: the question to be addressed, the plan of action, the expected results, and the linkage to current work. You will be judged on: the originality of the proposed research, the feasibility of it, and whether your research plan is sound and will truly address the question proposed. **Part #3 is due on Friday November 30th.**
4. **Oral Presentation:** The final part of the semester project is an oral presentation of your results. Oral presentations must be made in Power Point (or a non-Microsoft product of your choice). I require oral presentations in general, and Power Point specifically, in order to (a) prepare you for future talks at national conferences and (b) to get you up to speed on current technology. It is far easier to hone those public speaking skills in a classroom filled with friends than in a conference room filled with hundreds of scientists! Note that all students (graduate or otherwise) have to give this oral presentation. Presentations will be 15 minutes in length with an additional 5 minutes of Q&A and will take place on **Friday December 7<sup>th</sup>**

**5. Grading:** Grading will be based on class participation, the exams, and the final project. There will be **no** extra credit and **no** make-ups. The exact grade breakdown will be:

|                                    |       |     |
|------------------------------------|-------|-----|
| • Class participation              | ..... | 10% |
| • Mid-term examination             | ..... | 25% |
| • Final examination                | ..... | 25% |
| • Final project ( <i>oral</i> )    | ..... | 20% |
| • Final project ( <i>written</i> ) | ..... | 20% |

**6. Web Site:** The site is located at [http://skilling.geology.pitt.edu/GEO2750/Volcanology\\_Syllabus.pdf](http://skilling.geology.pitt.edu/GEO2750/Volcanology_Syllabus.pdf). Please check the Course Schedule and Announcements (below) regularly for revisions to the class schedule and announcements as the semester progresses.

**7. Cheating:** This is not even worth bringing up in a graduate course. All students are expected to abide by the University Academic Integrity Policy (<http://www.pitt.edu/~provost/ai1.html>). If you are caught cheating during a test or plagiarizing on your projects you will receive no credit for that exam/project.

**8. Disabled Students:** If you have a disability for which you are or may be requesting an accommodation, you are encouraged to speak with one of the instructors or Disability Resources and Services: 216 William Pitt Union (412) 648-7890/(412) 383-7355 (TTY), as soon as possible.

DRS will verify your disability and determine reasonable accommodation for this course.

9. [Course Schedule](#)

**Announcements**

1. 31st August 2007: Please read chapter 2 in Francis and Oppenheimer this week. This is examinable, ie REQUIRED reading