Basic information about the summer class 01:460:210 “Earthquakes and Volcanoes”, offered by the Summer School of Rutgers University. This year the class is offered as a hybrid, with a few lectures, and with the majority of instruction conducted via the online learning resource, rutgersonline.net.

Class Goals and purpose:
This class will survey the basics of knowledge about earthquakes, volcanic eruptions, and ways these natural processes affect human civilization. Some very general objectives, not necessarily in the order of their importance, are listed below.

• Develop a basic familiarity with modern understanding of the way our planet functions
• Learn basic facts about volcanoes, earthquakes, and their connection to large scale processes within the Earth.
• Learn about hazards earthquakes and volcanoes pose to the human civilization, and about means of mitigating them.

Besides specific objectives above, it is the intent of this class to familiarize the student with the broad concept of the scientific inquiry: what constitutes knowledge, how is it acquired, how is it verified, how is it applied.

Class material falls naturally into two parts, Volcanoes and Earthquakes, which will be explored in sequence. The first segment of the class, from July 11th through July 28th, will deal with Volcanoes. The second segment, from July 29th through August 17th, will deal with Earthquakes. Online material on Volcanoes will be open online on July 11th, and will stay open throughout the class. Material for the Earthquakes segment of the class will open on July 29th.

There will be three live lectures:
July 11 Class organization, goals and a broad overview of the topic. The lecture will also include a short review of basic concepts of modern Earth Science.

July 26 Review lecture on the subject of Volcanoes.

August 15 Review lecture on the subject of Earthquakes

Material presented during live lectures will be made available afterwards in the form of an uploadable Power Point file.

The grade in this class will be composed of the grades received for two homework assignments and two examinations.

July 28th - A mid-term exam, covering the subject of volcanoes;
August 17th - A final exam, covering the subject of earthquakes
Materials from online lectures and required reading will form the basis of exams’ questions. Exams will be multiple-choice, and will be conducted in person.
Two homeworks will be assigned, one for each topic. Homeworks will rely on online information resources relevant for the subject, and will involve information gathering and manipulation. The primary goal of homework assignments is to familiarize students with modern methods of finding, processing and presenting relevant information.

tentative schedule for homeworks:

Volcanoes Homework: week of July, 18th
due date - Friday, July 22nd

Earthquakes Homework: week of August 8th
due date - Friday, August 12th

textbooks:
**How Volcanoes Work** -- Vic Camp
This is an online information resource, at this link:
http://www.geology.sdsu.edu/how_volcanoes_work/

**Earthshaking Science: What We Know (and Don't Know) about Earthquakes** -- Susan E. Hough
This is a “real” book.

Below is a syllabus of the class from last year. This year the class will cover similar ground, but will also include updates called for by some recent events (e.g., the Sumatra earthquake)

2004 Summer Syllabus
07/12/2004: Class organization and an Earth Science Primer
07/13/2004 Volcanoes, and what comes out of them
07/14/2004 Volcanic eruptions, their mechanisms, and their products
07/15/2004 Ridges, rifts and hot spots: volcanoes that make new rock
07/19/2004 Subduction zones: volcanoes that recycle
07/20/2004 History-making Eruptions
07/22/2004 Volcano monitoring
07/26/2004 Volcanic Hazards, forecasting volcanic activity, volcanic risks
07/27/2004 Role of volcanoes in development (?) and maintenance of life on Earth
07/28/2004 Volcanoes on other terrestrial planets.
07/29/2004 **MID-TERM**
08/02/2004 No Class
08/03/2004 Earthquakes: history of ideas about their origin and means of detecting and recording them, detection.
08/04/2004 Locating and measuring earthquakes
08/05/2004 Earthquake Source description
08/09/2004 All About Faults 1
08/10/2004 All About Faults 2, the earthquake process
08/11/2004 Historic Earthquakes
08/12/2004 Earthquake hazards and Risk
08/16/2004 Forecast and Prediction of earthquakes
08/17/2004 Review: Earthquakes and Volcanoes as a guide to the way our planet functions