

# SIO 170- Introduction to Volcanology

MWF 10:00-10:50

Ritter 229

**Instructor:** Geoffrey Cook

**Office:** 303 Vaughan

**Phone:** 534-3406 (SIO)

**Email:** [gwcook@ucsd.edu](mailto:gwcook@ucsd.edu)

**Office Hours:** by appointment (please don't be afraid to contact me anytime!)

Welcome to the wonderful and spectacular world of volcanoes! I am thrilled to be able to offer you this experience, and I hope it is educational and stimulating throughout. The class will introduce you to the science of volcanology, including fundamental principles and processes of volcanic eruptions. I hope to give you a better understanding of what volcanologists do and why volcanology is an important scientific discipline from a societal standpoint. As always, please let me know if you have questions or concerns and know that I am here to help at all times.

### *Class Organization and Grading:*

This class will include weekly lectures, demonstrations, and discussions that will take place during the regularly assigned class periods. Grades will be based on the following:

Midterm exam: 50 points

Final exam: 50 points

Homework and in-class assignments: 50 points

Volcano paper: 25 points

Total = 175 points

### *Textbooks and Readings*

The class text is *Volcanoes* 2<sup>nd</sup> edition by Francis and Oppenheimer. It is a great reference, and you should make every effort to read the appropriate chapters that are keyed to the topics I will be discussing in class.

### *Absences and Missed Work:*

There will be no make-up examinations. In the case of legitimate conflicts, notification is required at least one week before the regularly scheduled examination. In the case of deaths, accidents, or sickness, notification is appreciated as soon as possible and is required within one week of the regularly scheduled examination time. *All excuses must be in writing.*

### *Classroom Conduct:*

Disruptions during lecture will not be tolerated. Disruptive behavior including talking, excessive noise, poor behavior towards other students or instructors/TAs, arriving late/leaving early, reading newspapers in class, inappropriate language/comments in lecture or on-line, or ringing cell phones will result in your being asked to leave the class. It is to your benefit to arrive on time because most announcements and assignments occur at the beginning of lecture.

# Schedule

**General Note:** This syllabus is an outline of proposed events. It is subject to change; however, never without notification, and never to advance the due dates of assignments.

<u>Date</u>	<u>Lecture Topic (Ch. in Volcanoes)</u>
10-3	Introduction to volcanology
<b>10-6</b>	<b>NO CLASS</b>
10-8	Tectonics and volcanic structures (Ch. 2, 13)
10-10	Tectonics and volcanic structures (Ch. 2, 13)
10-13	Magma and volcanic rocks (Ch. 4)
10-15	Magma and volcanic rocks (Ch. 4)
10-17	Styles of eruption: eruptive classification (Ch. 5)
10-20	Styles of eruption: eruptive classification (Ch. 5)
10-22	Lava flows (Ch. 6)
10-24	Lava flows (Ch. 6)
10-27	Introduction to pyroclastic density currents (Ch.7)
10-29	pyroclastic eruptions and pyroclastic density currents (Ch. 7 and 10)
10-31	pyroclastic eruptions and pyroclastic falls (Ch. 7 and 8)
11-3	<b>MIDTERM EXAM</b>
11-5	Pyroclastic deposits from mafic eruptions (Ch. 7.5)
11-7	Domes and block and ash flows (Ch. 9)
11-10	Lahars (Ch. 12)
11-12	Lahars and debris avalanches (Ch. 12)
11-14	Super volcanic eruptions and calderas (Ch. 11)
11-17	Super volcanoes and calderas (Ch. 11)
11-19	volcanic hazards and monitoring techniques (Ch. 17)
11-21	Volcanic hazards and monitoring techniques (Ch. 17)
11-24	Case studies of famous eruptions
11-26	Case studies of famous eruptions
<b>11-28</b>	<b>NO CLASS- THANKSGIVING HOLIDAY</b>
12-1	Case studies of famous eruptions
12-3	Volcanoes and climate (Ch. 16)
12-5	Review/catch up

**Final Exam: Friday, December 19, 8-11 AM**