

GEOL20: Natural Hazards (Hybrid)

Fall 2017

Instructor: Dr. David Kratzmann

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Office Hours:

Mon: 9:00-10:00 & 3:00-3:30* Tue: 9:00-10:00, 3:00-3:30*

Wed: 9:00-10:00 Thu: 9:00-10:00, 3:00-3:30*

Course Description

As the world's population grows and expands, humans are confronting natural hazards more frequently. This course provides a survey of Earth's processes that have direct, often sudden and violent impacts on societies and civilizations. Utilizing an interdisciplinary approach that includes geology, oceanography, ecology and meteorology, the course covers topics including earthquakes, tsunamis, volcanic eruptions, erosion and landslides, bolide impacts and drought.

Course Outline of Record

https://portal.santarosa.edu/srweb/SR_CourseOutlines.aspx?CVID=37552&Semester=20177

Recommended Text:

Natural Disasters, 8th ed. 2012. Abbott, P. (\$10 to \$20 used online)

Useful Links: http://www.usgs.gov/natural_hazards/ <http://www.colorado.edu/hazards/>

Student Learning Outcomes

Upon successful completion of the course the student will be able to:

1. Apply scientific techniques to answer questions related to the occurrence of natural hazards.
2. Critically analyze information about hazards to assess cause and effect, susceptibility and risk.
3. Explain the complex interplay between humans and the environment.

Objectives

1. Explain the nature of geology as a science.
2. Differentiate the main rock types and describe how earth materials influence natural disasters.
3. Relate the concepts of plate tectonics to the occurrence of geologic hazards.
4. Explain the causes, effects, and measurement scales of geologic phenomena such as volcanoes, earthquakes, tsunamis, landslides, and coastal erosion.
5. Interpret the role of science in evaluating, predicting, and mitigating natural disasters.
6. Evaluate the effects of natural hazards on humans, and the changing influence of the human population on these phenomena.

Evaluation and Grading

Your final grade in this course is achieved through a combination of exams, weekly assignments, disaster summary, and participation during the semester. There are 500 points possible in this course: distributed as follows:

Midterm exams (3): 70 points each (x3 = 210 pts)

Weekly assignments: worth 200 pts total (10 in total)

Major Project: 90 points

Final letter grades will be based in the number of points earned, according to the following scale

A: 500-450 pts → 90+%

D: 325-275 pts → 64-55%

B: 449-400 pts → 89-80%

F: below 275 pts → <55%

C: 399-325 pts → 79-65%

Exams: There will be 3 midterm exams during the semester, worth 70 points each (20-40 objective and 10-20 written points) - ~42% of grade. Questions are designed to test your understanding of subject matter and your ability to assimilate and incorporate information. Exams will include some combination of true/false, multiple choice, fill-in-the-blanks, and short and long answer format questions.

Important exam notes:

- Late arrivals will NOT be allowed to start an exam once another student has finished and left.
- Your lowest score from the three midterm exams will be dropped. The final exam score will not be dropped. Exams cannot be made up except if you notify me IN ADVANCE (after the fact does not constitute in advance) and there are extenuating circumstances for missing the exam or you have documentation of illness.
- Cheating will not be tolerated and will result in no credit for the exam or activity.

Weekly Assignments: Each week, you will complete various assignments, including quizzes, homework questions, and practical activities, both in-class, at home (online and physical), or combinations of both. The total points for all assignments each week is 200 points - 40%. **Successful completion of the course is not possible if you do not complete the assignments.**

Major Project: Students will be required to complete a project during the course of the semester. Further information on the project will be available during the semester. Electronic submission at the end of the semester required. 90 points total or 18% of the overall grade.

Suggestions for Success

- Please turn your cell phone and other electronic devices **OFF DURING CLASS!**
- Stay on top of the material. You may be expected to spend up to 6 hours per week OUTSIDE of class to complete the required reading, assignments, and studying.
- Devote the time necessary to succeed in this course - do the assigned reading, review lecture notes, take advantage of online and textbook resources, study for exams, and, most importantly, show up for class. Everyone can succeed in this class, so set high expectations and then work hard to meet them.
- Do not hesitate to ask questions, participation is encouraged. Get to know your instructor and classmates.
- I reserve the right to drop any student who misses more than 10% of classes.
- Abide by the Code of Student Conduct while in class and on campus, including rules on cheating and plagiarism. You are encouraged to read the code in its entirety if you have any questions. Any violation of this code can result in your suspension from the classroom and/or receiving no credit for the assignment or exam. The code (and other guidelines concerning student behavior on campus) can be found at the following web address: http://www.santarosa.edu/for_students/rules-regulations/student-conduct.shtml

Safety/Emergency Information: Please note the location of the red Emergency Preparedness Handbook in the classroom. In an emergency situation, immediately contact Campus Police at 527-1000 or dial 1000 from any campus phone. In the event of an emergency that requires evacuation from the building, please leave the class immediately, but calmly. If you are a student with a disability who may need assistance in an evacuation, please see me during my office hours as soon as possible so we can discuss an evacuation plan.

Disability Resource Information: If you need disability related accommodations for this class, such as a note taker, test taking services, special furniture, use of service animal, etc., please provide the Authorization for Academic Accommodations (AAA letter) from the Disability Resources Department (DRD) to me as soon as possible. You may also speak with me privately during office hours about your accommodations. If you have not received authorization from DRD, it is recommended that you contact them directly. DRD is located in Petaluma Village on the Petaluma campus and Analy Village on the Santa Rosa campus.

Section 2173 – WED 3:00-5:00 pm IN CLASS

Tentative schedule (subject to change)

Week	Date	Topic	Readings	Activity
3	09/06	Natural Disasters and the human Population Internal Energy – Earth formation	Ch 1 Ch 2	Hazards
4	online 09/13	Main rock types Plate tectonics	Ch 2 & 4	Plate Tectonics
5	online 09/20	Earthquakes	Ch 3 & 5	Earthquakes
6	online 09/27	<i>Exam Review Online</i> EXAM #1 Chs 1 – 5		
7	online 10/04	Volcanic Processes	Ch 6	
8	online 10/11	Volcanic Case Studies	Ch 7	Volcanoes
10	online 10/18	Coastal Processes Tsunami	Ch 8	Flooding
11	online 10/25	Weather and Climate	Ch 9	Sea Level Rise
12	online 11/01	<i>Exam Review Online</i> EXAM #2 Chs 6 – 9		
13	online 11/08	Hurricanes /Cyclones	Ch 11	Hurricanes
14	online 11/15	Fire	Ch 14	Fire
15	online 11/22	<i>Major Project</i>		
16	online 11/29	Mass Movements	Ch 15	Landslides
17	online 12/06	<i>Exam Review Online</i> EXAM #3 Chs 11, 14, 15		
18	online 12/11	<i>Course wrap up / Project Submission online</i> Last Week Regular Semester		
19		Final Week Regular Semester		