

GEO160, Geology in the News: Natural Hazards
Block 3, 2016

Professor: Dr. Emily Walsh

Email: ewalsh@cornellcollege.edu

Office: Norton 204 (x. 4302)

Office hours: We will see a lot of each other, so please make an appointment with me if you would like to talk outside of class time.

Course texts: *They Say I Say* by Graff & Birkenstein (2nd ed); Other required readings are accessible via Moodle. You should bring the day's assigned reading to class with you.

Course Meeting Times: The course will meet most days from 9-11 and 1-3; however, see Course Schedule for other meeting times.

Course Description

Record hurricane landfalls. Historic flooding in Texas. Devastating wildfires and mudslides in California. We seem to be increasingly barraged with news about momentous natural disasters. Is there actually an increase in the occurrence (or the magnitude) of natural disasters? Are all these disasters related? How and when do natural hazards become classified as natural disasters? This course will highlight the active role of geology in our daily lives by exploring the natural hazards reported in the daily news. Students will learn about the geology of natural hazards, such as earthquakes, flooding, or drought, and will begin to investigate some of the widespread effects such natural hazards/disasters have on individuals, society, the economy, and politics. Significant time will be spent on the writing process, including critical reading of primary and secondary sources, and drafting and revising different types of academic writing.

Course Objectives

Learning Outcomes for First-Year Writing Seminar:

- Students will experience guided practice in critical reading. (*Knowledge, Inquiry, Reasoning, Communication*)
- Students will understand writing as a nonlinear process that involves multiple stages. (*Inquiry, Communication*)
- Students will write appropriately for a given audience, purpose, and context. (*Knowledge, Inquiry, Reasoning, Communication, Intercultural Literacy, Ethical Behavior*)
- Students will gain practice in developing and sustaining an argument with evidence. (*Knowledge, Inquiry, Reasoning, Communication, Citizenship*)
- Students will evaluate, cite, and document sources appropriately. (*Knowledge, Inquiry, Reasoning, Ethical Behavior*)
- Students will learn to incorporate feedback and revision. (*Knowledge, Inquiry, Reasoning, Communication, Citizenship*)

By the end of the course, students should also:

- Understand the role geologists play in researching the causes and effects of natural hazards. (*Knowledge, Vocation*)

- Be familiar with geologic terms and concepts used to explain different natural hazards and be able to apply this knowledge to analyze natural hazard events in the news. *(Knowledge, Inquiry, Reasoning, Communication)*
- Be able to explain the geology that caused a particular natural hazard event to different audiences, including professional audiences and members of the general public. *(Knowledge, Communication, Intercultural Literacy)*
- Be able to evaluate the various factors affecting whether a natural hazard becomes a natural disaster. *(Knowledge, Inquiry, Reasoning, Intercultural Literacy)*
- Be able to assess the potential effects of climate change on the occurrence and magnitude of natural hazards. *(Knowledge, Inquiry, Reasoning, Communication)*
- Be able to apply their new knowledge to create and communicate a plausible mitigation plan for the impacted community of a particular natural hazard event. *(Knowledge, Inquiry, Reasoning, Communication, Intercultural Literacy, Citizenship)*

This course supports the Educational Priorities and Outcomes of Cornell College with emphases on knowledge, inquiry, reasoning, and communication; it also touches upon aspects of vocation, intercultural literacy, and citizenship.

Course Information

Responsibility:

As students at a liberal arts college, you are responsible for your own engagement in the academic conversation. This means being a prepared and active participant. This includes reading the syllabus and all the assigned material, but more importantly, this means thinking critically, asking questions, coming to class having formulated your own ideas and responses to the course material, and engaging in dialogue with others. If you do not understand a topic of discussion, an assignment, a grade, or if you have any other questions or concerns, please come and talk with me.

Class Structure:

This class includes a mix of lecture, lab, workshop, field trip, in-class activity, and discussion, and is designed to promote interaction and exchange. *The content of the course mirrors this structural flexibility, which means that I am open to steering the class toward the areas that most interest you.* I expect everyone to contribute to discussion and to be an active participant in all aspects of class. Please be an informed and respectful participant—listen to and learn from each other, and put in the time necessary to fully engage the course material. Remember that you only get out of a class what you are willing to put into the class. Let's make it worth your while!

Work Expectations:

According to the US Department of Education, the work expectations to receive credit for a block course (equivalent of a 4 credit course) are 150 hours (in *and* out of the classroom). This means that, on average, you should be spending a little over *6 hours on course work everyday* (including on the weekends).

Technology Policy:

There will be certain times during class that it would be helpful to use a laptop, tablet, or smartphone. I expect you to use these devices ***only*** for class related purposes. If I believe that you are misusing technology, repercussions may follow.

Late Work:

The block goes by quickly, and it behooves you to keep up with the work. Please talk with me if you are getting behind, or if you need to set up an extension for a *future* assignment. I will *not* accept late assignments without having previously agreed to an extension, except in emergency situations.

Course Accommodations:

Cornell College makes reasonable accommodations for persons with disabilities. Students should notify the Coordinator of Academic Support and Advising (Brooke Paulsen) and their course instructor of any disability related accommodations *within the first three days* of the term for which the accommodations are required, due to the fast pace of the block format. For more information on the documentation required to establish the need for accommodations and the process of requesting the accommodations, see <http://www.cornellcollege.edu/academic-support-and-advising/disabilities/index.shtml>.

Academic Honesty:

Cornell College expects all members of the Cornell community to act with academic integrity. An important aspect of academic integrity is respecting the work of others. A student is expected to explicitly acknowledge ideas, claims, observations, or data of others, unless generally known. When a piece of work is submitted for credit, a student is asserting that the submission is her or his work unless there is a citation of a specific source. If there is no appropriate acknowledgement of sources, whether intended or not, this may constitute a violation of the College's requirement for honesty in academic work and may be treated as a case of academic dishonesty. The procedures regarding how the College deals with cases of academic dishonesty appear in The Catalogue, under the heading "Academic Honesty."

Cheating, plagiarism, and other forms of academic dishonesty will not be tolerated. Any student in this course who is involved in academic dishonesty (portraying another person's work or ideas as their own, submitting the same or similar papers in more than one course without permission from the course instructors, facilitating plagiarism, etc.) will not earn credit for the relevant assignments, may be formally charged with academic dishonesty, and may receive an F in the course.

15-Day Drop:

To drop on the 15th day, you may have no more than 2 excused absences; you must have completed all your work, and you must have participated in class. I reserve the right to decide which excuses are valid and to determine whether you have been participating actively in class.

Additional Resources:

To get the most out of this course, I recommend you use all the resources available to you, including me, of course; Amy Gullen, Consulting Science Librarian; Jessica Johanningmeier,

Quantitative Reasoning Consultant; Jennifer Ferrell and other consultants in the Writing Studio; and Rich Berg in the Academic Media Studio. These individuals and offices can provide both basic help as well as advanced guidance to help polish your research, writing, and presentation skills. Please ask for assistance!

Additional information on writing can also be found online at the Dartmouth Writing Program: Material for First Year Writers: <http://dartmouth.edu/writing-speech/learning/materials/materials-first-year-writers>

Graded Work

You will complete several different types of assignment in this course, including low-stakes writing assignments like guided freewrites, 1-page write-to-learn essays, and reflections; higher-stakes writing assignments like research papers; short, question-based in-class activities; and longer, inquiry-based lab exercises. Assignments will generally be uploaded to Moodle; comments (feedback) will typically be made through Moodle. I will not grade or comment on all assignments. If you don't think you have received my comments, please ask!

Note that most of these assignments include writing. As in most fields, scientists communicate their findings largely through writing. They must be able to distill their research into easily understandable text for a wide range of audiences. Many “controversies” arise due to a lack of understanding on the part of the public, and so excellent writing (and oral communication) skills are exceedingly important. Practice, of course, “makes perfect”. And the great thing about writing is: the more you write, the better you understand the subject about which you are writing. Therefore, we will practice writing for different purposes and for different audiences, including for your own learning and reflection.

Grading:

10% Lab assignments, in-class assignments, and low-stakes writing assignments (including freewrites, reflections and other write-to-learn assignments); 5% Course participation; 15% Rhetorical analysis; 70% Natural hazard project (5% Annotated bibliography; 25% Geological analysis; 5% Mitigation proposal; 20% Mitigation project; 5% Revision statements; 10% Final presentation).

Low-Stakes Writing Assignments:

Low-stakes writing assignments (including reflections, freewrites, and other write-to-learn assignments) are short assignments, in which you write as a means of organizing your own thoughts on a subject. These assignments are meant to help you understand your knowledge of a topic, as well as your questions and your perspective on that topic. The purpose of these assignments is to get you to think more deeply about a topic and how it affects you; they also help me understand your mastery of a topic. Some of these assignments will not be graded; some will be credit/no credit; some will be graded on a $\sqrt{+}$, $\sqrt{}$, $\sqrt{-}$ scale.

Laboratory and In-Class Exercises:

Labs and other in-class assignments are designed to give you hands-on experience to help you better understand the course material. Even for group labs, it is important that you each

participate fully to gain a clear understanding of the material. Field trip attendance is mandatory—see me ahead of time if you are going to miss a field trip.

Natural Hazard Research Project:

Throughout the course, you will be tasked with various assignments that, when pieced together, create a rich, multifaceted natural hazard research project. A main goal for this project is to allow you to explore a particular natural hazard event that is, in some way, meaningful to you—whether through personal experience, location, or other factor. As we move through the course, you will gain new knowledge and skills that can be applied to the study of your chosen natural hazard event. The project is broken into smaller pieces that will build upon each other to allow for practice of essential reading, writing, and research skills, and to allow for workshoping and revision. While all parts of the course content and assignments can be considered building blocks for this final portfolio project, the project grade includes only 7 of the pieces: the annotated bibliography, the geological analysis, the mitigation proposal, the mitigation project, the revision statements (for the geological analysis and mitigation project), and the final presentation.

Class Schedule

The following is a tentative course schedule—I may change the order of, add or cull subject material depending on course progress. Assignments are due the next morning at 8:30 am unless otherwise noted. For full details, see Moodle.

Week 1:

Monday, October 22

9 am — Course introduction: writing and natural hazards

1 pm — Mitigation and risk assessment

Assignments — Readings #1; Reading assignment

Tuesday, October 23

9 am — Natural disasters; Map your hazard lab

1 pm — Jennifer Ferrell: rhetorical analysis

Assignments — Finish Map your hazard lab; Compare/contrast WorldMapper; Readings #2

Wednesday, October 24

9 am — Map your hazards presentations; Hurricanes

1 pm — No class

8 pm — Natural hazard event topics due on Moodle

Assignment — Readings #3; Reading assignment

Thursday, October 25

9 am — Hurricanes and flooding

1 pm — Researching with Amy Gullen (**meet in Cole Library 212**)

8 pm — Rhetorical analysis draft due on Moodle

Assignment — Readings #4; Reading assignment

Friday, October 26

9 am — Flooding

1 pm — Jennifer Ferrell: revision workshop for rhetorical analysis

Assignment — Readings #5; Reading assignment

Week 2:

Monday, October 29

9 am — Drought & wildfires

9 am — Annotated bibliography due on Moodle

1 pm — TBA

Assignment — Readings #6; Reading assignment

Tuesday, October 30

9 am — Jennifer Ferrell: thesis workshop

1 pm — Landslides/mudslides

8 pm — Revision of rhetorical analysis due on Moodle

Assignment — Readings #7; Reading assignment

Wednesday, October 31

9 am — Jennifer Ferrell: data workshop

1 pm — Landslides/mudslides

Assignment — Readings #8; Reading assignment

Thursday, November 1

9 am — Plate tectonics

1 pm — Plate tectonics

Assignment — Readings #9; Reading assignment

Friday, November 2

9 am — Jennifer Ferrell: peer review workshop

1 pm — Earthquakes

Assignment — Readings #10; Reading assignment;

Prepare for Monday's peer review workshops

****Saturday, November 3, 8 pm: Draft of geological analysis due on Moodle**

Week 3:

Monday, November 5

9 am — Individual meetings

*11:30 am — Majors fair on the OC

1 pm — Peer review workshop

Assignment — Readings #11; Reading assignment

Tuesday, November 6

9 am — Jennifer Ferrell & Rich Berg: audience & ways of dissemination

1 pm — Earthquakes & tsunamis

Assignment — Readings #12; Reading assignment

Wednesday, November 7

9 am — No class

***11:10 am — David Loy lecture (meet in Hall-Perrine, Thomas Commons)**

1 pm — Volcanoes

8 pm — Revision of geological analysis due on Moodle

Assignment — Readings #13; Reading assignment

Thursday, November 8

9 am — Volcanoes

1 pm — Volcanoes

8 pm — Proposal for mitigation project due on Moodle

Assignment — Readings #14; Reading assignment

Friday, November 9

9 am — Jennifer Ferrell: metacognition

1 pm — Climate change

Assignment — Readings #15; Reading assignment

****Sunday, November 11, 12 pm: Draft of geological analysis due on Moodle**

Week 4:

Monday, November 12

9 am — Individual meetings

1 pm — TBA

Tuesday, November 13

9 am — Final presentations

1 pm — Final presentations

Wednesday, November 14

12 pm — Final portfolio due