

Time: Tuesday 7 - 10 pm

Classroom: 247 JRP (Lawrence), RH251 (Edwards)

Instructors:

Dr. Chi Zhang - 304 Lindley Hall, Department of Geology. chizhang@ku.edu 785-864-6029.

Office Hours: Tuesday 4 - 5 pm, or by appointment.

Dr. Leigh A. Stearns - 4 Lindley Hall, Department of Geology. stearns@ku.edu 785-864-4202,

Mackenzie Cremeans - ? Lindley Hall, Department of Geology. mackenziecremeans@ku.edu 785-864-????

Teaching Assistants: ??? and ???

Course Materials: Carla W. Montgomery, Environmental Geology, 10/e, McGraw-Hill, 2014. In addition, selected scientific datasets and publication in the fields relevant to the topics will be reviewed and discussed. Access to Blackboard (<http://courseware.ku.edu/>) is required.

Course Description: Environmental geology is geology applied to living. This course is designed to introduce you to our natural environment and the human interactions with our dynamic Earth. We will examine how geologic processes shape the surface, and how these processes and hazards influence human activities (or sometimes the reverse). We will discuss how the scientific methods allow us to ask and answer questions about the Earth. Topics include natural hazards (earthquakes, volcanoes, floods), resource extraction (mining, fossil fuels, groundwater pumping), and pollution (climate change, water quality).

Course Expectation: By taking this course, I hope you will be more informed about how humanity can live responsibly and sustainably on Earth. You will also be able to

- Understand how geologic processes drive and control natural disasters.
- Understand the interactions between the Earth systems and human activities.
- Demonstrate critical thinking and the use of scientific method through interpretation of geologic and environmental data.
- Evaluate past, current, and future environmental issues and become aware of the need for improvement of the health of the environment.

You are expected to work hard and participate. The keys to success in this course are reading the pertinent material, taking and reviewing notes, and participating in class activities.

Quizzes: There will be one quiz each class that will address the material covered in the previous lecture.

Homework Assignments: Five assignments will be handed out and will be due the week after. Turn in your assignments on time, late assignments will not be accepted. All

Paper (Report): You will each research and write one paper (report) on an environmental geology issue. You will choose the topic from a list provided in class and on Blackboard. The paper (report) must be analytical. You have to demonstrate you research your own sources and have found data that is relevant to the topic. You also have to justify how your choice of data and arguments support the topic. Ms. Cremeans will help you keep on schedule and develop a

well-researched, well-written paper (report). Turn in your paper (report) on time, late paper (report) will not be accepted.

Exams: There will be two exams - midterm and final. The exams will be a combination of multiple choice, review questions, and long answer essay questions or diagrams. All exams will be closed book. There will be no make up exams.

Course Policy: This bi-campus course consists of one three-hour lecture a week. Dr. Zhang will usually teach at Lawrence and will work with the Edward class through a combination of polycom technology, class visits, and TA lectures. Attendance during class is mandatory. Please arrive on time and turn off your cell phone. Treat your instructors, TAs, and classmates respectfully at all times. If you need accommodations because of a documented disability, please contact Services of Students with Disabilities (SSD) at 135 Strong Hall, 785-864-2620. Cheating in any form will not be tolerated. For more information, please read University Senate Rules and Regulations (USRR) (<http://policy.ku.edu/governance/USRR#art2sect6>).

Evaluation: The grading for this course will be based on quizzes, homework assignments, paper (report), exams.

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|----------------------|-------------|
| Weekly Quiz | 15% |
| Homework Assignments | 15% |
| Paper (Report) | 25% |
| Midterm Exam | 20% |
| Final Exam | 25% |
| Total | 100% |

Grading Scale:

| A | A- | B+ | B | B- | C+ | C | C- | D+ | D | D- |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| ≥93.3 % | ≥90.0 % | ≥86.6 % | ≥83.3 % | ≥76.6 % | ≥73.3 % | ≥73.3 % | ≥70.0 % | ≥66.6 % | ≥63.3 % | ≥60.0 % |

Weekly course schedule:

| Date | Class Topic | Reading | Assignment |
|---------|--|-----------|--------------|
| Jan. 20 | <ul style="list-style-type: none"> Syllabus Introduction to the Earth System | Chapter 1 | N/A |
| Jan. 27 | Rocks and Minerals | Chapter 2 | Assignment 1 |

| Date | Class Topic | Reading | Assignment |
|---------|--|--------------------------|--|
| Feb. 3 | Plate Tectonics ----- — Ms. Cremeans • Paper (Report) - Introduction to Scientific Paper | Chapter 3 | Assignment 1 Due |
| Feb. 10 | Earthquakes | Chapter 4 | Assignment 2 |
| Feb. 17 | Volcanoes ----- — Ms. Cremeans • Paper (Report) - Find the topic and reliable sources | Chapter 5 | Assignment 2 Due |
| Feb. 24 | Water Resources | Chapter 11 | Assignment 3 |
| Mar. 3 | Weathering, Erosion, and Soil Resources ----- — Ms. Cremeans • Paper (Report) - Literature Review | Chapter 12 | • Assignment 3 Due • Paper (Report) Topic Due |
| Mar. 10 | • Midterm Exam • Mineral and Rock Resources | Chapter 13 | |
| Mar. 17 | Spring Break - no class | | |
| Mar. 24 | • Energy Resources - Fossil Fuels • Energy Resources - Alternative Sources ----- — Ms. Cremeans • Paper (Report) - Scientific data interpretation | Chapter 14 Chapter 15 | Assignment 4 |
| Mar. 31 | • Waste Disposal | Chapter 16 | • Assignment 4 Due • Paper (Report) Outline Due |

| Date | Class Topic | Reading | Assignment |
|---------|---|------------|---|
| Apr. 7 | Dr. Stearns • Rising Sea Levels - Concerns • Temperature and Melting ----- — Ms. Cremeans • Paper (Report) - Academic Writing | Handouts | Assignment? |
| Apr. 14 | Dr. Stearns • An Uplifting Story of Sea Level Change | Handouts | Assignment? Paper (Report) - First Draft Due |
| Apr. 21 | Dr. Stearns • Regional Sea Level Changes ----- — Ms. Cremeans • Paper (Report) - peer review | Handouts | Assignment? |
| Apr. 28 | Water Pollution | Chapter 17 | Paper (Report) - Final Draft Due |
| May 5 | Air Pollution | Chapter 18 | |
| May 12 | Final Exam | | |

**This syllabus may be subject to change. Changes, if necessary, will be announced in class, or be posted on Blackboard. You will be responsible for being aware of such changes when they are announced.*

