

# GEOL 250: ENVIRONMENTAL GEOLOGY

## Fall 2014 Syllabus

**Instructor:** Dr. Gigi Richard, Professor, Geology, Dept. of Physical and Environmental Sciences  
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**Class hours:** MWF 11-11:50 am Wubben-Science 154

**Prerequisites:** GEOL 100 or 105 or 111 or 113.

### Required Materials:

Textbook: Montgomery, *Environmental Geology*, 10th edition (with access to McGraw-Hill ConnectPlus).

NOTE: A custom version of the textbook is available at the bookstore. We do not cover every chapter, so the custom version only includes the chapters that we cover, is bundled with ConnectPlus and is a lot cheaper than the full textbook. You are welcome to purchase the entire textbook from another bookseller if you want, but you will need to also purchase access to Connect. **You must have access to the associated textbook website: McGraw-Hill Connect (or ConnectPlus).** Chapter quizzes will be assigned in Connect. Also, there will be reading assignments from the textbook for each topic in the class. You will be expected to read the assignments prior to class and be ready to discuss the material in class. ConnectPlus includes a copy of the e-book.

**Field Trip:** There will be a mandatory ½-day field trip. Date to be determined.

### Course Learning Objectives:

Upon completion of this course, you should be able to:

- Explain the basic physical processes associated with volcanic activity, earthquakes, hurricanes, coastal erosion, river flooding, global climate change, and tsunamis.
- Explain how human resource consumption and waste disposal impacts the physical environment including energy, mineral, soil and water resources.
- Evaluate the risk associated with natural hazards and human response to those risks and connections between human activities and the severity of certain natural hazards
- Assess the role that geologists play in hazards assessment and minimizing environmental impact of human activities
- Consider a basic hazards assessment for a property
- Read environmental news stories critically and begin to distinguish science from opinion and media hype.
- Recognize the underlying values that affect decision-making processes
- Recognize the many ways in which your everyday actions are connected with and impact the physical and biological cycles and processes operating on earth.
- Perform basic computations and create graphs in a spreadsheet to analyze human population growth data and flood frequency data.
- Give a presentation and write a thoughtful analysis better than when you started the class.

## CMU Geosciences Program Student Learning Objectives:

GEOL 250 contributes to the following student learning objective for students who complete a BS in Geosciences:

- Articulate the fundamental knowledge base and ideas of the major fields of geoscience (specialized skills in geoscience).
- Give an effective oral presentation on a geoscience study (communication skills).

**How to succeed in this class:** In this class you will take an active part in the learning process. In some ways, this will make the course more challenging. However, I hope this approach will make the course more fun and interesting. Because of the interactive nature of the course, attendance and participation will be necessary for you to completely achieve the course goals.

Please also visit the guide to Student Success at CMU:

[http://www.coloradomesa.edu/academics/documents/StudentSuccessatCMU\\_WCCC.pdf](http://www.coloradomesa.edu/academics/documents/StudentSuccessatCMU_WCCC.pdf)

A successful student will do the following:

- Silence and put away their cell phones when they enter class.
- Attend class **promptly** and **regularly**. Changes to the schedule and/or assignments may be announced in class. It is your responsibility to keep informed.
- Be prepared, alert and ready to **take notes** in class. Preparation includes reading the assignments and doing the homework.
- Speak up in class. Ask questions, make comments! Call me, email me, come to office hours or raise your hand in class!
- Respect your classmates and keep an open mind to what others have to say. Class discussions will be a more productive exchange of ideas if everyone feels comfortable speaking and knows that their classmates respect what they have to say.
- Complete the assigned reading before class and be prepared to demonstrate your understanding of the material or to present questions on the material that you don't understand. Pop quizzes are likely.

**Expectation:** An undergraduate student should expect to spend on this course a minimum of **two hours outside the classroom for every hour in the classroom**. More details are available in CMU's *Curriculum Policies and Procedures Manual*. This is a 3-credit course, so expect to spend at least **SIX hours per week** outside of class time reading your textbook, studying, reviewing class notes, taking practices quizzes online, doing your homework and reading other assigned readings.

**Grading:** Your final grade will be based on the following scheme:

Enviro News	5%
Class Participation	5%
Assignments	15%
Chapter quizzes	10%
3 Exams (15% ea)	45%
Final Exam	20%
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Total	100%

Letter grades will be assigned using the standard scale: A 90-100%; B 80-89%; C 70-79%; D 60-69%; F < 60%

**Environmental News:** Each student will be required to give one 5-minute newscast on a current environmental news topic. More details will be provided in a separate handout.

**Class Participation:** As you can see, participation is 5% of your grade. Class participation includes attending class both physically and mentally prepared. Discussion will be a significant part of class sessions. You will be expected to ask and answer questions in class.

**Assignments** - Homework will be assigned regularly. Keeping up with the homework is the best way to be prepared for class and for the exams. Be prepared to discuss the homework problems in class each day. A field trip report will be included in the homework grade.

- Homework will be due at the **beginning** of the lecture on the due date.
- Organization and neatness will be a significant part of your grade!
- Late homework will accrue a 10% deduction of the total possible points off your earned grade. Late assignments will NOT be accepted after the rest of the students' assignments have been graded..
- You are encouraged to discuss homework with classmates, HOWEVER simply copying someone else's homework solution is a breach of academic honesty (see section on Academic Integrity below).
- There may be unannounced quizzes given at any time during a lecture period. The score on these quizzes will be added to the homework score.

**Chapter Quizzes:** Quizzes for each chapter covered will be assigned in ConnectPlus, the website associated with your textbook. They will be due BEFORE we cover the material in class!

**Exams:** In addition to evaluating your understanding of the basic concepts of environmental geology, exams (including the final) will also contain questions that assess your developing ability to think like a geologist and to apply scientific reasoning and geologic principles to everyday problems. **Note!** *You must be present in class on days when exams are given.* Exceptions will be made only with my prior approval. The final exam is comprehensive and will require that you can synthesize and analyze material from the entire semester.

**K: Drive:** Course material and PowerPoints will be available on K:/GEOL250/001/Share. Also, each student will have a folder on the **K: drive** (K:/GEOL250/002/Students/yourusername) where you will be expected to store some of the assignments for this course. At the end of the semester, your data in the K: drive will be deleted completely. Be sure you save your files on a flash drive if you want to keep them after the semester ends. You are welcome to store any material you want in your K: student folder, but remember that your instructor can see everything in this folder.

## NOTES:

**Academic accommodation for students with disabilities:** In coordination with Educational Access Services, reasonable accommodations will be provided for qualified students with disabilities. Students must register with the EAS office to receive assistance. Please meet with the instructor the first week of class for information and/or contact Dana VandeBurgt, the Coordinator of Educational Access Services, directly by phone at 248-1801, or in person in Houston Hall, Suite 108.

**Academic Integrity:** Students will be held to a high standard of academic integrity and as such are expected to “do their own work” in accordance with the Colorado Mesa University Academic Policies Guide, <http://www.coloradomesa.edu/academics/policies.html>, statement on Academic Integrity. Representing someone else’s work as your own, that is, without proper citation or acknowledgement is considered plagiarism. In other words, it is not acceptable to copy a classmate’s work, or anyone else’s work from the web, a book, magazine, newspaper, journal, etc. A report will be filed with the Vice President of Academic Affairs for any confirmed case of plagiarism.

**Tutorial Learning Center (TLC) in HH 113:** The TLC is a FREE academic service for all Colorado Mesa University students. Tutors are available on a walk-in basis for many courses. Do you have a quick question? Do you need homework clarification or feedback on a paper? Are you reviewing for a test? Help is available at the TLC!

At the main campus, come to Houston Hall 113 to meet with one of our friendly peer tutors. The TLC is open on Monday through Thursday from 8am-6pm, and Fridays from 8am-5pm, and Sundays from 1pm-6pm. Tutoring at branch campuses and distance tutoring is also available. Check out the website for schedules and locations at [www.coloradomesa.edu/tutoring](http://www.coloradomesa.edu/tutoring) or call 248-1392 with any questions.

**Tomlinson Library:** Reference Librarians can assist you if you need help with research, finding reliable print and electronic resources or citation help. The Reference Desk is on the first floor of the Tomlinson Library located on the CMU campus. And for your convenience, you can Instant Message (IM) a Reference Librarian 24/7 from the Tomlinson Library home page or call the Reference Desk at 970-248-1860. Email your questions to: [libref@coloradomesa.edu](mailto:libref@coloradomesa.edu)

Reference Desk hours: (Spring & Fall) Monday-Thursday 8am-9pm; Friday 8am-5pm; Saturday 10am-5pm; Sunday 1pm-9pm.

Tomlinson Library also has study rooms and computer labs with color printers & scanners.

Topics to be covered and tentative exam dates:

**Exam 1 – Wed. Sept 10th:**

Foundations

- Introduction – Ch. 1
- Geology review – Ch. 2 & 3

Intro to Natural Hazards – video & handouts

**Exam 2 – Mon. Oct. 6<sup>th</sup>:**

Hazardous Processes

- Earthquakes – Ch. 4
- Volcanoes – Ch. 5
- Streams and Flooding – Ch. 6

**Exam 3 – Fri. Nov. 7<sup>th</sup>:**

Hazardous Processes (con'd)

- Mass Movements – Ch. 8

Resources & Pollution

- Energy Resources: Fossil Fuels – Ch. 14
- Energy Resources: Alternative Sources – Ch. 15
- Climate: Past, Present & Future – Ch. 10

**Final Exam (cumulative) – Wed. Dec 10<sup>th</sup>:**

Resources & Pollution (con'd)

- Water Resources – Ch. 11
- Water Pollution – Ch. 17
- Soil Resources – Ch. 12