GEOL120/ENVI120: Environmental Geology

Professor Kelly MacGregor
Office: Olin-Rice 116
Office hours: Tuesday 1-4 and by appointment
(651) 696-6441 office
macgregor@macalester.edu

Teaching Assistant: Karanina Scheel
Office hours: TBA
kscheel@macalester.edu

Course Overview: The physical environment has begun to show signs of our earth's expanding population and the increasing need for natural resources. Geologic materials such as soil, water, and bedrock, and geologic processes such as earthquakes, volcanic activity, and running water often pose constraints on land use. This course is designed to introduce students to the relationship between humans and their geologic environment: the Earth. We will focus on understanding the processes that shape the surface of the Earth, and how these processes affect human activity. We will use current scientific methods to collect and analyze data. Topics include surface-water dynamics and flooding, groundwater and groundwater contamination, pollution and waste management, landslides, volcanic and earthquake hazards, and global climate change. Format: Three one-hour classroom meetings per week, with occasional lab meetings for local field excursions. Evaluation will be based on participation, homework/classroom assignments (including reading reflections and group activities), a 10 page research paper (including drafts and peer review), and two one-hour exams.

Who Should Take This Course: Environmental Geology is designed to provide students with an understanding of the scientific approach geologists use to examine the environment, as well as provide a forum for examining the human relationship with the Earth. This course is an introductory level course in geology, and is cross-listed as an Environmental Studies course. It is appropriate for those students interested in either a science major OR a degree outside of the science division. This course is a Q2 course, and fulfills 2 out of the 3 'quantitative thinking' General Education requirements at Macalester.

Texts:
Required

McPhee, J., 1999. The Control of Nature. Farrar Strauss Giroux, 272 p.

Mount, Jeff. California Rivers and Streams. University of California Press, 359 p.

Alley, Richard. The Two-Mile Time Machine. Princeton University Press, 229 p.

Recommended

Merritts, DeWett, and Menking. Environmental Geology. WH Freeman and Company, New York, New York. 452 p.

Shelby. Red River Rising. Minnesota Historical Society Press. 265 p.

Readings/Assignments:

http://moodle.macalester.edu is where you will find readings, assignments, helpful weblinks and announcements. This is also a place where you can post questions and comments of your own. You will also be able to share data with each other here. Check it frequently!

Readings (except those from the required texts) can be downloaded from the course Moodle page. I reserve the right to add/change the reading assignments during the course.

All assigned readings for the week must be completed prior to the class meeting on Wednesday, unless I tell you otherwise. You may be asked to complete a 'reading reflection', either on Moodle or during the first few minutes of class. No late reading reflections will be accepted.

Class/Field Trips/Assignments:
This course is designed to allow us to get our hands dirty – sometimes literally! - in the field – like real geologists! This means that early in the semester (when the weather should be nice) we will be going on several trips – yippee! It also means that you MUST come to class PREPARED –I expect you will all be ready to learn and ask questions. To get a lot from this course, you must invest time in the readings and assignments – this is where the depth and synthesis will happen!!!

Important points:
I need everyone to be on time to class – you will be left behind if we are headed on a field trip, which will result in a ZERO! You will NOT be able to make up field exercises.

I will try to hand out a set of questions relating to the field trip/lectures/readings we covered that week. While you are not required to turn in your answers to these questions, you should be confident of what you would turn in, if pressed. I will guarantee some of these questions will be on the exams.

Collaboration on the weekly questions and on assignments is encouraged, but I expect each person to turn in their own work. I strongly advise you to consult myself or each other once you have already attempted to figure something out; i.e., do not lean too heavily on others to get you through the assignments, or you will find yourself having a tough time on the exams.

I expect all of the assignments to be turned in on time, unless you have talked with me in advance. Late assignments will be docked 10% each day it is late (an assignment worth 100 points will be worth a maximum of 90 points if it is one day late). An assignment is considered a day late if it is between 1 minute and 24 hours late. If you think you have a good reason your work is late, please talk to me in advance. Assignments are worth 0 points if they are more than 1 week late.

Please turn in neat work. If you need to type or re-copy handwritten work, please do so.

Paper:
You will have one 10 page paper in this course, due in late November (a title and abstract are due in mid October). The paper will be on a topic of your choice related to an environmental geologic issue. Details on this assignment will follow.

Exams:
In this course, you will have two one-hour exams. The written exams will be primarily short answer and essay questions. I try to write exams that will allow you to show me your understanding of the presented concepts and not simply your ability to memorize an answer. The final exam will test your knowledge, reasoning and explanatory skills of the course material.

I do not allow students to take exams at times other than those posted. This is because it is not fair to the students in the class who take the exam on time. Some reasons I WILL reschedule: 1) You will be out of town on a Macalester-related event (sports, music, etc.), 2) You are genuinely ill, 3) You must leave town for a family emergency. If you are dealing with a long-term crisis or illness (either you or a family member), I encourage you to come and talk to me so I can better support your work in class and accommodate you.

Success in this course:
There are several things that you can do to be successful in this course. They include:

° Please do the required reading before class. It will not only help you understand the lectures, but you may be expected to discuss readings in class with your colleagues.

° Please attend class. If you can't be there, please let me know in advance, if possible. You will be responsible for getting notes from your colleagues.

° Do not get behind in your reading and studying. You will find that it is almost impossible to cram for a course that meets only once a week, and you will learn much more if you can ask questions along the way!

° Working in groups is incredibly useful – talk with your colleagues (and me!) about the material you are learning! You will learn a lot of vocabulary in this class, and you need to adopt some language skills to be successful. In addition, you can help each other – one person's weakness is anothers' strength. Group work also allows you to find out what you don't know. Steps to 'enlightenment': 1) read about it 2) attend class and hear about it 3) work with a group to discuss it and 4) try to explain it to someone else!

Grades:
Assignments/reading reflections/class participation: 30%
Research paper: 30%
Hour exam I: 20%
Hour exam II: 20%

I will assign a final grade by taking the following percentages into account:
90-100% = A
80-89% = B
70-79% = C
60-69% = D
The top 2% of each category will typically receive a "+" (i.e., a score of 88-89% will receive a B+), and the lower 3% of each category will receive a "–" (91% is an A-).

The good news: There is no limit on the number of students who can get any grade. If 50% of the class achieves an overall score of 95%, then 50% of the class will get an A…….yay!

The bad news: I am not an easy grader. It is important to know up front that I think an A means OUTSTANDING – in terms of effort, discipline, comprehension, and skills.

Other details:
I am available to talk with you about the class material and assignment questions by appointment. You are welcome to stop by my office, but I can't guarantee I'll have time at that moment! Calling in and emailing questions work as well. I will be use Moodle as a tool for answering questions and disseminating information – please check this regularly!

Cheating is obviously not allowed. As per the Academic Honesty statement (found in the student handbook), a first offense will cause you to get a failing grade on the assignment, and a second offense means you fail the class. If in doubt about what constitutes cheating or plagarism, or if stress is causing you to consider this route, please come to my office to talk with me.

My goal is not only to teach you the principles of environmental geology, but also to stir your fascination in the way the earth works! Please to not hesitate to talk to me about how I can improve your learning environment!

I am committed to providing assistance to help you be successful in this course. Reasonable accommodations are available for students with documented disabilities. Please meet with the Associate Dean of Students, Lisa Landreman, who will serve as the coordinator for services for students with disabilities. It is important to meet with her at the beginning of the semester to ensure that your accommodations are approved and in place to begin the semester successfully. The Associate Dean can be reached in the Office of Student Affairs, 119 Weyerhaeuser, by phone at 651-696-6220, or email llandrem@macalester.edu.