

# ESCI 123-1 Geology, Resources and Environment Fall 2011

**Dr. Ken Voglesonger**

Lecture: Tuesdays and Thursdays, 12:15 p.m. – 1:30 p.m.

Location: BBH-102

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Office Hours:

Monday: 9:00 – 11:00

Wednesday: 11:00- 12:00, 2:00 – 3:00

Thursday: 4:30 – 6:00

**or by appointment (seriously!)**

Textbook: Environmental Geology by Carla W. Montgomery, 9<sup>th</sup> edition, 2008. McGraw-Hill. ISBN: 9780073524085 {8<sup>th</sup> edition ISBN: 9780077216054}

Companion Website for the textbook: [www.mhhe.com/montgomery9e](http://www.mhhe.com/montgomery9e)

Course Description: The Earth, its structure, composition, and resources. Mineral and energy resources, their formation and distribution, their supply and demand projections for the future. Water resources and water quality. Environmental impact of resources, nuclear and other waste disposal, geological aspects of earthquake and volcanic hazards. Lecture 3 hrs. Prerequisite: Undergraduate level MATH 091 Minimum Grade of C or NEIU Math Placement Result 02 or ACT Math 19 or ACT Math 20 or ACT Math 21

Course Objectives: By the end of the course, you should be able to:

- ❖ Describe the basic structure of the earth, the nature of solid earth materials, and basic earth systems as they affect the surface geologic environment.
- ❖ Describe the physical processes that operate to shape the surface of our dynamic planet.
- ❖ Explain the causes of geologic hazards such as earthquakes, volcanic eruptions, landslides and floods, and discuss how the risks of these hazards can be mitigated.
- ❖ Describe the processes of formation and the distribution of geologic resources such as soil, groundwater, mineral ores, fossil fuels and other energy sources; be able to discuss geologic factors important to making wise decisions about resource use.
- ❖ Demonstrate appropriate use of geoscience terminology, in a context of interpreting and analyzing environmental/geological concerns as found in news reports, political dialogue, and academic texts.
- ❖ Critically evaluate environmental issues in a geologic context, as related to decisions about the environment, resources, and society as a whole.

The course objectives listed above are designed to integrate a knowledge of geology with life in the real world, and how we think about our natural environment. All of us want to and should be able to make informed decisions about our interactions with the environment as individuals (Do I really want to buy a house near the San Andreas Fault? Why can't I build my house on this floodplain? Should I recycle?), and as members of society (Is nuclear power safe? Is climate change real? ). This class is designed to give you the tools to make those kinds of informed decisions.

Course Structure: Class sessions will primarily consist of lecture, but will also have weekly in class discussions, group activities, and assignments. Although this is a large class, I'd like to run it as if it were a smaller one. To that end, I'd like you all to feel free to ask questions so that we can discuss topics that are of interest, or topics that aren't clear. Also, if there are topics of special interest, let me know and if we have time, we can explore those in more detail.

Assessments: So that we can keep on top of our progress in the class, we will use a type of classroom assessment called “Muddiest Points” or “Minute Papers.” These assessments are designed to check whether or not I am communicating clearly, and whether you are learning concepts effectively. The assessments are totally anonymous (don’t put your name on it), and are not quizzes or tests. At the end of each class, on a small piece of paper, I’d like you to take write down what was unclear, what you didn’t understand, or any questions or comments you have about the lecture. They are just a way to check on how the class is progressing. **If I forget to do this – PLEASE REMIND ME!!**

Course Schedule: This schedule is only a guide and is subject to change as the semester progresses. If time permits, additional topics may be covered (depends on how the schedule works out!)

Class Week	Lecture Number	Month	Date	Topic	Readings	
One	1	August	Aug. 30 <sup>th</sup> , (Tuesday)	Course Introduction: Syllabus, Policies, and Expectations. The Planetary Environment	Syllabus, Chapt. 1	
	2	Sept.	Sept. 1 <sup>st</sup> , (Thursday)	The Planetary Environment, Rocks & Minerals	Chapt. 1 & Chapt 2	
Two	3		Sept. 6 <sup>th</sup> , (Tuesday)	Rocks & Minerals	Chapt. 2	
	4		Sept. 8 <sup>th</sup> , (Thursday)	Rocks & Minerals, Plate Tectonics	Chapt. 2 & 3	
Three	5		Sept. 13 <sup>th</sup> , (Tuesday)	Plate Tectonics	Chapt. 3	
	6		Sept. 15 <sup>th</sup> , (Thursday)	Streams and Flooding	Chapt. 6	
Four	7		Sept. 20 <sup>th</sup> , (Tuesday)	<b>QUIZ #1 (Chapt. 1, 2, &amp; 3)</b> Streams and Flooding	Chapt. 6	
	8		Sept. 22 <sup>nd</sup> , (Thursday)	Streams and Flooding, Water as a Resource	Chapt. 6 & Chapt. 11	
Five	9		Sept. 27 <sup>th</sup> , (Tuesday)	Water as a Resource	Chapt 11	
	10		Sept. 29 <sup>th</sup> , (Thursday)	Waste Disposal	Chapt. 16	
Six	11		October	Oct. 4 <sup>th</sup> , (Tuesday)	<b>QUIZ #2 (Chapt. 6 &amp; 11)</b> Waste Disposal	Chapt. 16
	12	Oct. 6 <sup>th</sup> , (Thursday)		Water Pollution	Chapt. 17	
Seven	13	Oct. 11 <sup>th</sup> , (Tuesday)		Water Pollution	Chapt. 17	
	14	Oct. 13 <sup>th</sup> , (Thursday)		Fossil Fuels & Alternative Energy	Chapt. 14 & 15	
Eight	15	Oct. 18 <sup>th</sup> , (Tuesday)		<b>QUIZ #3 (Chapt. 16 &amp; 17)</b> Fossil Fuels & Alternative Energy	Chapt. 14 & 15	
	16	Oct. 20 <sup>th</sup> (Thursday)		Air Pollution	Chapt.18	
Nine	17	Oct. 25 <sup>th</sup> , (Tuesday)		<b>MIDTERM EXAM (Chapt. 1, 2, 3, 6, 11, 16, &amp; 17)</b>		
	18	Oct. 28 <sup>th</sup> , (Thursday)		Air Pollution	Chapt. 18	
Ten	19	November		Nov. 1 <sup>st</sup> , (Tuesday)	Soil as a Resource	Chapt. 12
	20			Nov. 3 <sup>rd</sup> , (Thursday)	Soil as a Resource	Chapt. 12
Eleven	21		Nov. 8 <sup>th</sup> , (Tuesday)	<b>QUIZ #4 (Chapt. 14, 15, &amp; 18) Climate Change</b>	Chapt. 10	
	22		Nov. 10 <sup>th</sup> , (Thursday)	Climate Change	Chapter 10	
Twelve	23	Nov. 15 <sup>th</sup> , (Tuesday)	Earthquakes	Chapt. 4		

Twelve (cont.)	24	November (cont.)	Nov. 17 <sup>th</sup> , (Thursday)	<b>QUIZ #5 (Chapt. 12 &amp; 10)</b> Earthquakes	Chapt. 4
Thirteen	25		Nov. 22 <sup>nd</sup> , (Tuesday)	Volcanoes	Chapt. 5
	26		Nov. 24 <sup>th</sup> , (Thursday)	NO CLASS (Thanksgiving!)	
Fourteen	27	December	Nov. 29 <sup>th</sup> , (Tuesday)	Volcanoes	Chapt. 5
	28		Dec. 1 <sup>st</sup> , (Thursday)	Catch up & Review	Chapt. 4
Fifteen	29		Dec. 6 <sup>th</sup> , (Tuesday)	<b>QUIZ #6 (Chapt. 4 &amp; 5)</b> Catch up & Review	T.B.A.
	30		Dec. 8 <sup>th</sup> , (Thursday)	Catch up & Review	T.B.A.

**Final Exam (Chapters 14, 15, 18, 12, 10, 4, & 5) – Tuesday December 13<sup>th</sup> 10:00 – 11:50 (NOTE NOT DURING REGULAR CLASS TIME!!)**

**Friday November 11th is the last day you will be able to drop the course!**

Readings: It is required that you do the assigned readings before class. This will help you to become familiar with material before we discuss it for the first time, and will help you to identify questions that you'll have about particular topics. Having the readings done before class will also be very helpful to you when we do activities & assignments during class time.

Attendance: While I won't be taking attendance every day, if you don't come to class, you won't pass. Missing class means that you will miss in class activities and assignments which make up about 30% of your grade. You'll also be missing key points and topics that will make it much easier to study for quizzes and the final exam. So it is in your best interest to come to class.

Quizzes: There will be 6 quizzes during the semester that will focus on the material covered in the previous portion of the course (they aren't comprehensive). Quizzes will last for about 30 minutes or less. **Only the best 5 out of the 6 quizzes will count towards your final grade.** Quizzes may consist of material covered during lecture, in the readings, in class activities, and assignments. **There will be no make-up quizzes.** The quizzes make up 30% of your final grade.

In class activities/ Take home assignments: About once a week, we'll have some sort of in-class group activity, or a take home assignment. The activities are designed to have you work together and discuss topics that we are covering & the assignments are designed to review important concepts and ideas covered that week in class. Activities and assignments make up 30% of your final grade. **In class assignments cannot be made up** (if you aren't in class that day and miss it – you lose out on the points.) **Take home assignments will have 10% deducted for each day they are late, and will not be accepted after 2 days after the due date.**

Mid Term and Final Exam: The midterm will cover material from the beginning of the course, and the final will cover material from the midterm forward. As with the quizzes, the final exam will cover material from lecture, readings, in class activities, and assignments. Questions on the midterm and final will be very similar to questions from your quizzes. **There will be NO make-up exams for the midterm or the final. The final exam will be held Tuesday, May 3<sup>rd</sup> from 10:00 – 11:50 A.M.** The midterm makes up 20% of your grade, and the final also makes up 20% of your grade.

Grading:

Quizzes: (6 total – lowest one is dropped):	150 points
In Class Activities & Assignments:	150 points
Mid Term	100 points
Final Exam:	100 points
Total:	500 points

Grades will be assigned as follows:

A = 450 - 500 Points (90 – 100%)

B = 400 - 449 Points (80 – 89%)

C = 350 - 399 Points (70 – 79%)

D = 300 - 349 Points (60 – 69%)

F = 0 - 299 Points (59% and lower)

Statement on Academic Conduct (from the NEIU Course Catalog): Northeastern Illinois University students are expected to exhibit the highest standards of academic integrity. Academic misconduct such as plagiarism or cheating is unacceptable and will be investigated in accordance with University policy on Academic misconduct (see Student Survival Kit).

Office hours: My office hours are listed on the first page of the syllabus. I **strongly** urge you to come to office hours if you feel something is unclear, if you are having difficulty with a certain topic, or to just come by and say hi. I also urge you to come to my office hours if you think something we are covering is exciting, or if you'd like more information on Geology and Earth Science. Although it is a large class, I'd like to get you know as individuals as much as possible, and coming to my office hours is a great way to make sure that happens. If my scheduled office hours don't work for you, and you'd like to talk to me about something, just grab me before or after class, or email/call me, and we can set up an appointment.

Tutor Availability: Tutors are available for this course. This service is free to the students. Tutors are Earth Science students who hold regular office hours in room BBH-130, and in cooperation with the instructor, can conduct review sessions for exams. If you would like to use this service, let me know, and I can help to arrange it.

Electronic Communication: As much as possible, I will use Blackboard and email to give you details of the course. These may include answers to assignments, review sheets for quizzes, etc. I will post my lecture slides on Blackboard **after** each class. **You must have an email account, and you are expected to check your email and the Blackboard site at least twice a week.** If you don't have an email account, or do not know how to get into the Blackboard system, come and see me immediately, and I can help get you set up.

Accessibility: If you have a physical, psychological, medical or learning disability that may impact on your ability to carry out assigned course work, I would urge that you contact the staff in the Accessibility Center Office, Building D, room 104, phone extensions: 5495, 5496, 5497, and 5498. The Accessibility Center will review your concerns and determine with you what accommodations are necessary and appropriate. All information and documentation of disability are confidential.

### **EXPECTATIONS:**

My expectations for students in my classes are pretty standard and reasonable. I do expect you **to attend class**, I do expect you to **do the readings before the scheduled class time**, I do expect you to **participate in class activities**, I do expect you to **pay attention and stay awake**, and I do expect you to **complete all assignments**. Additional expectations are outlined below (this list can also be found on the Sociology Department home page at NEIU – <http://orion.neiu.edu/~sociology/guidelines.html>).

## CONDUCT IN THE CLASSROOM

The classroom setting offers a unique opportunity to meet and interact with a diverse population of students and faculty as well as a forum for new learning and a secure place to challenge existing ideas and values. In order for all of us to benefit from this experience, certain types of conduct must be adhered to:

1. **Students and faculty are expected to attend all class sessions.** If there is a reason that requires an instructor to cancel a class session, the students will be notified in as timely a manner as possible.
2. Excessive absences and/or lateness may result in a lowering of a student's grade or an invitation to drop the course.
3. Students and faculty are expected to be **on time** for class and to **remain** until the class ends. Entering a class after it has started or leaving before the class ends can be disruptive to the learning process.
4. Cell phones are disruptive to the learning process. **All cell phones are to be turned off during class. During quizzes and exams, all cell phones, laptops, netbooks, tablets, etc. must be off and put away.**
5. Students are responsible for **all assignments and material covered in class**, whether or not they attend and regardless of the reasons for any absence.
6. Each student is expected to come to class prepared and to contribute to class discussions. The expected ratio of outside time to class time is 3 to 1; that is, for every credit hour, the student should spend 3 hours of study time, or about 9 hours a week.
7. All students are expected to conduct themselves in accord with university policies with respect to academic honesty as stated in the student handbook. **Anyone engaging in plagiarism, cheating, or any other form of academic dishonesty should be prepared to receive a failing grade.**
8. Polite, respectful classroom behavior is expected even when engaging in discussions of controversial material.

Incomplete grades will only be given in accordance with University Policies as published in the course catalog. **The last day to drop the course is Friday, November 11th, 2011.**

## GENERAL EDUCATION PROGRAM AT NEIU

**This course is part of the GENERAL EDUCATION (Gen Ed) PROGRAM at NEIU. The following information provides information about the Gen Ed Program, and the function of this particular course in the Program.**

In the General Education Program, the University identifies five areas in which students gain some general knowledge to enrich their lives and enhance their academic experience. Every undergraduate student must take courses from a list of designated courses in each of these areas. The knowledge gained in these courses will provide an academic foundation that will help prepare students for the major and minor course areas and will encourage students to become life-long learners in many different and divergent fields of study. Students are required to take a minimum of 39 credit hours of General Education courses and are encouraged to complete these courses during their first 75 hours of course work. Transfer students may fulfill General Education requirements with courses taken at other colleges or universities.

## Distribution Areas

**Fine Arts FA** 2 courses, 6 credit hours from two of the following areas of study: Art, Mass Media & Theatre (in the CMT dept.), Music & Dance (in the Music dept.)

**Humanities HU** 3 courses, 9 credit hours from at least two of the following areas of study: Communication (in the CMT dept.), English, Foreign Languages and Literatures, Linguistics, Philosophy, Women's Studies (*NOTE: No more than two foreign language courses may be used to fulfill this requirement.*)

**Behavioral/Social Sciences SB** 4 courses, 12 credit hours from at least two of the following areas of study: African & African American Studies, Anthropology, Computer Science, Economics, Geography & Environmental Studies, History, Justice Studies, Latino & Latin American Studies, Political Science, Psychology, Sociology

**Natural Sciences NS** 3 courses, 9 credit hours from at least two of the following areas of study; one course must have a laboratory component: Biology, Chemistry, Earth Science, Physics (*NOTE: If an FYE ANTH that counts as NS is taken, then only one Biology course may be used for NS*)

**Math/Quantitative Reasoning MA** 1 course, a minimum of 3 credit hours that has Intermediate Algebra as prerequisite OR is on the General Education List of Approved Courses. Any 3 hour college level math course, beyond Intermediate Algebra, meets this requirement.

This course fits in the distribution area of Natural Science (NS).

The **goal of the General Education Program** is to assist students in developing the following abilities & skills. This course provides a back ground in the shaded areas:

- the ability to communicate both in writing and orally;
- The skills required to gather, analyze, document, and integrate information;
- An understanding of historical processes and cultural differences; aesthetic and literary sensitivity;
- An understanding of the modes of thought, concerns, and methodologies of the fine arts, the humanities, the social and behavioral sciences, and the natural sciences;
- And the ability to use quantitative methods in the natural, social, and behavioral sciences.