



# ***Geology and Human Events in Africa & the Middle East*** ***Fall 2007, Syllabus***

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## ***Goals for the course***

- *to enable you to analyze the underlying influence of geology and geologic processes on culture, politics, history, pre-history, economics, & international relations*
- *to enable you to analyze the role of geology and geologic processes in recovering our human past, analyzing the present, and predicting the future.*
- *to enable you to analyze spatially-referenced data using computerized GIS*



## **Introduction**

*In what ways have geology and geologic processes influenced history? politics? international relations? culture? economics? maybe even human evolution? What about ways that are not as obvious as floods, earthquakes, tsunamis, or volcanic eruptions? How does our ability to decipher the rock record help us analyze past events, past changes, and predict what will happen as the Earth system changes in the future?*

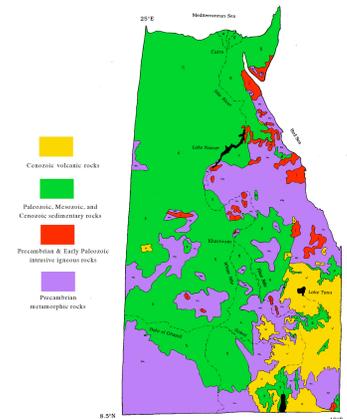
Mon Aug 27 introduction to the influence of geology on human events

Wed Aug 29 case example of the Delphic Oracle

## **Bedrock**

*The rocks under our feet – what influence do they have on us besides the exploitable resources they contain? What is responsible for the patterns in the bedrock and in the topography?*

Fri Aug 31 intro to GIS



Mon Sep 3 geology and physiography: a comparison of Africa, North America, and the Middle East  
 Wed Sep 5 Little Falls of the Mohawk River and resistance of common rocks  
 Fri Sep 7 field trip, leaving at 2 pm  
 Sat Sep 8 return by 9:00 pm on Saturday evening

Mon Sep 10 rock resistance and the connection between bedrock geology and landscape in the Adirondacks  
 Wed Sep 12 the Sumatra earthquake and plotting eqs in ArcMap  
 Fri Sep 14 how does bedrock geology influence the path of the Nile River and the extent of Ancient Egypt?



**Water Resources**

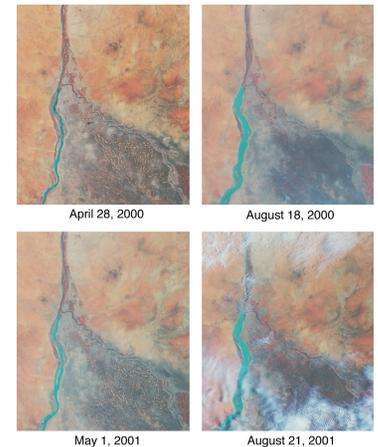
*Water, water, water. What are the issues involved in managing our water resources? What happens when humans tamper with a surface water system as large and as complex as the Nile? Do the benefits of damming such a river outweigh the geological and environmental consequences? What about groundwater systems? Are they the answer in arid regions? What are the geological underpinnings of hydropolitics?*

Mon Sep 17 Nile floods  
 Wed Sep 19 finish Nile floods; Egypt and water security

Fri Sep 21 irrigation before and after the Aswan High Dam; effects of damming the Nile at Aswan

Mon Sep 24 Lake Nasser: evaporation  
 Wed Sep 26 wrap up evaporation; earthquake basics  
 Fri Sep 28 earthquakes in the Eastern Med region

Mon Oct 1 tectonics of Middle East; reservoir-induced seismicity  
 Wed Oct 3 intraplate quakes; threat to AHD  
 Fri Oct 5 case histories of dam destruction



Mon Oct 8 what if the Aswan High Dam were to fail?  
Wed Oct 10 tsunami, liquefaction, Sodom and Gomorrah  
Fri Oct 12 the Toshka Lakes and the New Valley Project

Mon Oct 15 *October break*  
Wed Oct 17 more on the Toshka Lakes and the New Valley Project  
Fri Oct 19 are the Egyptians right in bypassing the Toshka Lakes in the New Valley Project?

Mon Oct 22 finish Toshka Project; lunar thin sections  
Wed Oct 24 groundwater model  
Fri Oct 26 more on groundwater; Saharan groundwater basins

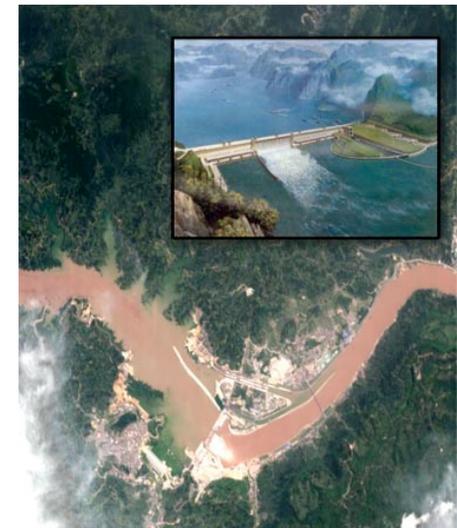
Mon Oct 29 no class: Barb out of town  
Wed Oct 31 **no class:** Barb out of town  
Fri Nov 2 radiometric dating of groundwater; Libya's Great Man-Made River Project

Mon Nov 5 how do Egypt's and Libya's water solutions compare to those elsewhere in the Middle East?

## Climate Change

*How has climate change influenced human history? How do we establish past climate change, and how can we use the geological record to predict the future?*

Wed Nov 7 flood patterns in Ancient Egypt and the rise and fall of dynasties; sea level change and the rise of agriculture in Ancient Egypt  
Fri Nov 9 intro to Saharan climate change  
Mon Nov 12 Saharan paleolakes, climate change in North Africa, and global warming



Wed Nov 14 finish Saharan climate change; Nile river evolution since Mesozoic

**Wrap-up case studies: bedrock geology, tectonics, & climate change and human events**

Fri Nov 16 intro to the Qattara Depression Solar Hydro-Electric Power Project

Mon Nov 19 guest presentation on WWII and the German North Africa Campaign (Col. Suzann Hensley)

Mon Nov 26 work on the Qattara Project

Wed Nov 28 work on the Qattara Project

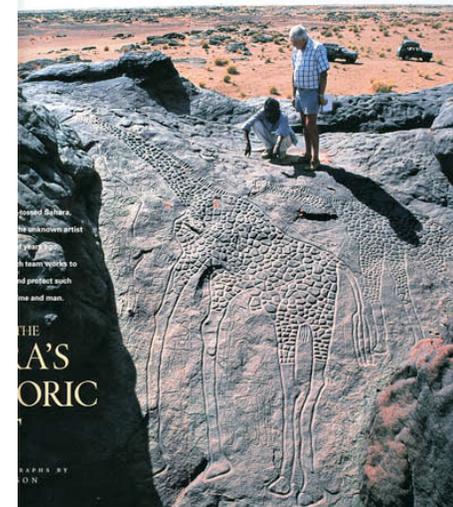
Fri Nov 30 GIS exploration of the West Nubian Paleolake Basin

**Wrap-up**

Mon Dec 3 bedrock geology and the Silk Road

Wed Dec 5 guest presentation on remote sensing and finding ground water in Darfur and Middle East (Eman Ghoneim)

Fri Dec 7 finish up bedrock geology and the Silk Road



**Nuts and Bolts**

**General expectations:**

I expect you to:

- take responsibility for your own learning
- come prepared for class and be an enthusiastic participant during class
- treat others with tolerance and respect
- act responsibly and reliably in group work
- set high standards for your work
- teach me something

You can expect me to:

- help you become a better self-learner and teacher
- create interesting and challenging ways for you to learn geology and its connections with human events, rather than talking at you about my knowledge
- set high standards for the class
- treat you with fairness and respect
- take an interest in you and learn something from you
- be excited and knowledgeable about course material

### **Getting help:**

- Barb: Science Center 1013, x4713, or btewksbu (by e-mail); virtually anytime during the day.
- TAs: to be determined

### **Bring to every class meeting:**

- your Africa course notebook, a pencil and eraser, a calculator, paper to take notes on.

### **Books and materials:**

- purchase at the bookstore: *Exploring Geology*, by Reynolds et al. ***This is not the same textbook that was used last year.***
- buy from the Science Center secretary: course materials (\$25) – cost covers notebook, subscription to *Geotimes*, and assorted materials you will be using during the semester.
- **Homework will be posted on Blackboard.**

### **Class meetings outside the normal times:**

**Field trip:** We will leave at 2 pm on Friday, September 7. We will return in the evening on Saturday the 8<sup>th</sup>. The Department will cover the cost of food, lodging, and transportation. **We will go regardless of weather, so come prepared!**

**Evening classes:** We may occasionally meet in the evening to make up for a class that I will have to miss if I am out of town. Those meetings are listed on the syllabus.

## **Policy on attendance – please read and heed!!!**

- This is not a lecture-based course, and what you will be *doing* during class time is a vitally important aspect of how you will learn in this course. You will also be working in groups during many of the classes, and you will have serious responsibilities to other people in the class that go beyond what would normally be expected of you in a standard lecture setting.
- Attendance is mandatory, and I will take attendance at every class meeting. Now for the difficult part. *Your final semester grade will be penalized 2 points for **each** unexcused absence.* Whatever you do, don't be casual and let yourself get into a fix in terms of your grade. This happens to a couple people every semester, and it's nearly as painful for me as it is for them (honest and truly). So, don't let yourself get into a bind.
- I will accept notification from the Health Center verifying that you were too sick to come to class (and they *will* notify faculty if you are really too sick to come to class; if they will not give you an excuse, it's because they think you're well enough to go to class), and I will accept legitimate absences for athletic commitments up to the limit set by the Faculty.
- If you miss a class for *any* reason, I will expect you to make up *all* of the work that you missed *before* the next class meeting, including work presented by someone else. Absence from one class does not exempt you from coming prepared to a subsequent class. I will expect you to take the responsibility to get the assignment from me for the following class **before class** and to come fully prepared to the class immediately after the one you missed. Please don't expect me to be cheerful and gracious if you miss a class and breeze in the following class and ask, "Can I get the assignment for today?"

## **Due dates for assignments:**

You will have two types of assignments. One type will be individual worksheets and questions; a second type will be preparation for group work during class.

- **Individual worksheets and questions.** Due dates will be marked clearly on each sheet. Late assignments will be penalized 10%, and late assignments not submitted before graded assignments are returned will receive a zero.
- **Preparation for in-class group work.** Many of the assignments will prepare you for work during class. If you do not have your class prep ready to turn in at the start of class, you will be a liability to anyone with whom you might work during class. If you haven't done your work, you may sit in the gulag at the back of the room and listen, but you will be marked as absent from class (in other words, the light's on, but nobody's home). See attendance policy above for the resulting grade penalty.

### **Writing:**

- While this course is not designated as a “writing intensive” course, writing will be an integral part of learning the material we cover in the course. Unless a person processes information in one way or another, he/she will not learn very much. Many courses ask students to process information by studying and taking exams. This course has no exams, and you will be processing information in this course by doing a good deal of writing and teaching. I will grade your writing according to the grading guidelines on the attached sheet.

### **Policy on hats:**

- Barb grew up at a time when it was considered unutterably impolite to wear a hat indoors, and she reacts badly to seeing people in class with hats on. Because a happy Tewksbury is a good thing, there will be a Hat Gulag at the door of the classroom. You may choose to wear a hat in class, but, because of Barb’s personal failings, she may not give you as much attention as you deserve if you are wearing a hat.

### **Grades:**

- Your final grade will be calculated using the following *approximate* percentages:

class prep and in-class work (~20 of these)	50%
summary papers and projects (~6 of these)	<u>50%</u>
Total	100%

**Remember! I don’t “give” you a grade – you earn it.**

### **Standards:**

- In this course, you will be graded on both your written work and your oral work. Some papers will receive standard number grades out of 20 or 30 (*e.g.*, homework problems involving calculations, short-answer problems, etc.). Other papers do not lend themselves as well to number grades, and those papers will be graded on a scale of 0 to 5, with each number reflecting a clearly-defined standard for the assessing your efforts. Those criteria are outlined on the next page. I will do this, rather than give you a letter or standard number grade, because I want you to focus on what kind of work you have done and what kind of work I expect from you, not on what grade you have gotten. *A satisfactory job on an assignment will earn a 3.* To earn a 4, you must do

more than an average workmanlike job, and a 5 requires that you really knock my socks off. Yes, the standards are high in this course.

- On the next page, you'll find both the general criteria for the 0-5 scale and a general view of where "satisfactory work" stands in terms of the College's grading system. Please notice that a B is *good* work, not merely satisfactory. So. This handout will let you know at the outset what it takes to get a B or an A in this course, both of which involve work above a satisfactory job on assignments, and that's the last time you'll see standard grades in this course. From now on, you'll simply receive a grade on the scale from 0-5 in the hopes that you can then focus on the quality of the product you produce in the course, not on the letter grade.

**Emergencies:**

- In the event of evacuation of the Science Center, College policy requires you to meet as a group in the quad immediately in front of the Science Center. I will check to make sure that each of you is accounted for, so, be sure to check with me and **do not leave**. In the event of true emergency, we will proceed from there to Commons Dining Hall.

**Disabilities:**

- Hamilton College will make reasonable accommodations for students with properly documented disabilities. If you are eligible to receive an accommodation and would like to request it for this course, please discuss it with me and allow two weeks notice. You will need to provide Allen Harrison, Associate Dean of Students Elihu Root House; ext. 4021) with appropriate documentation of your disability.

## Content

grade	criteria	approximate grade
5	outstanding explanation with superior supporting information; unusual insights and flashes of brilliance; creative and original analyses and thoughts; goes well beyond minimum required for assignment.	98 (A <sup>+</sup> )
4	good solid job on explanation, with excellent support from examples, data, figures, etc.; excellent reasoning, or excellent explanations; goes beyond the minimum required for the assignment.	88 (B <sup>+</sup> )
3	satisfactory job; does what the assignment asks; decent reasoning or explanations; satisfactory support by data, examples, figures, etc.	78 (C <sup>+</sup> )
2	decent explanation but too general <b>or</b> some inaccuracies or flaws in reasoning <b>or</b> coverage is accurate but cursory and does not meet the minimum required for a complete answer <b>or</b> inadequate support of assertions with data and/or examples.	68 (D <sup>+</sup> )
1	doesn't effectively address assignment; fails to support assertions with data or examples; unclear explanations; inadequate understanding; major flaws in reasoning or explanations.	58 (F)
no credit	answer missing or does not answer the question.	0

## Writing

grade	criteria	approximate grade
5	meets criteria for 4, but also has a sense of style, going beyond grammatical correctness to real readability.	98
4	excellent paper/paragraph organization, interesting sentences, good grammar, very few spelling errors, does not read like a first draft.	88
3	decent organization; serviceable prose; reads like a first draft; a paper with excellent writing will still earn a 3 if it contains many spelling errors and is clearly not proofread.	78
2	disorganized; awkward sentence structure; poor grammar; poor spelling.	68
1	similar problems to 2s, but worse.	58

