Exploring Geology & Environmental Science using Google Earth

Instructor
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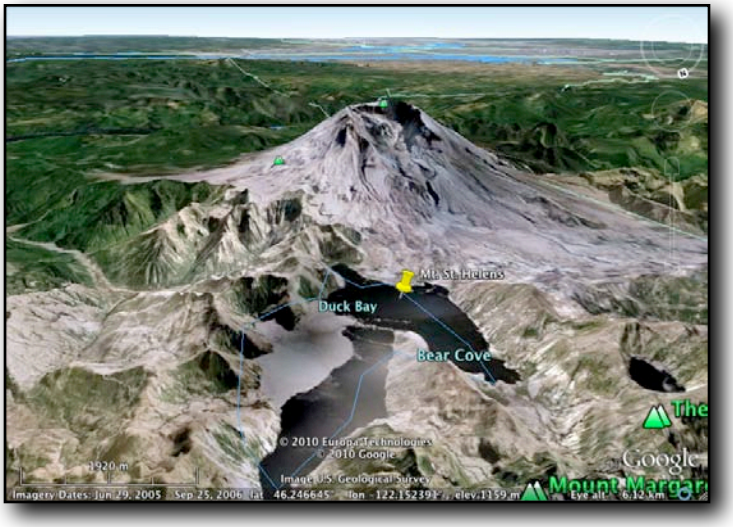
http://www.depauw.edu/acad/geosciences/

Class
10:30-11:30 am MWF, Julian 223

Office Hours
Stop in or by appointment.

Texts
Essentials of Geology, Marshak
(2009, 3rd ed., Norton)
bundled w/ *Geotours Workbook*, Wilkerson, Marshak, & Wilkerson, (2009, 2nd ed., Norton)
Google Earth for Dummies, Crowder
(2007, 1st ed.)
the Google Earth how-to notebook,
Wilkerson & Wilkerson,
(2010, cost billed to your student account)

Recommended Materials
A calculator, a USB drive, and a small stapler. You might also want a scroll-wheel, 3-button mouse.



COURSE GOALS

The primary goal of this seminar is to use Google Earth as a vehicle to engage participants on a broad range of interdisciplinary science topics that emphasize geology, geography, and environmental science. In particular, I expect that you will

- recognize geologic features and landforms and develop a basic knowledge of geological processes that enables you to more fully appreciate how the natural world works;
- learn valuable technical skills, including how to create content (e.g., formatted placemarks, map overlays, photo overlays, time animations, etc) for Google Earth; and
- improve in how you communicate with the written and spoken word.

In essence, you'll use Google Earth as a means to learn more about geology and the Earth on which we live, and hopefully you will leave this course as a better consumer of scientific knowledge with enhanced reasoning/critical thinking skills and writing/speaking abilities.

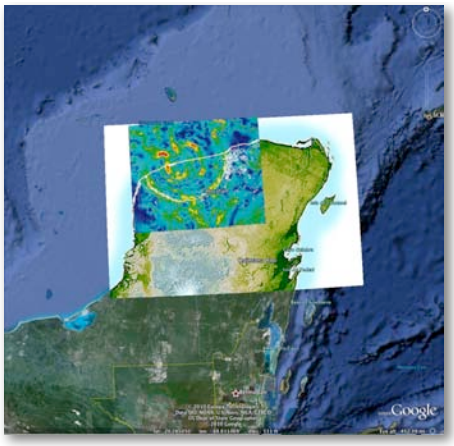
This syllabus is meant to provide an outline for the general flow of the course. At my discretion, I will add or omit topics and/or modify the timetable.

COURSE ORGANIZATION

The design of this seminar provides broad exposure to a variety of teaching and learning strategies. For example, you will 1) participate in lectures over both technical and scientific material, 2) engage in numerous critical-thinking and active-learning exercises (e.g., Google Earth Geotours), 3) read and discuss assignments from your textbooks and/or current news/Internet reports (which may involve student-led discussions, student presentations, written reports, etc.), and 4) work on technical projects for GIS Day, for a newspaper article, and for the topics we're studying that week (mini-projects). The Computational Geosciences Lab (Julian 201) will be available during class time and from 8:00-4:00 on weekdays for working on your assignments. Or, you may use any computer system at your disposal (including your laptops).

Our textbooks will be used for lectures and assignments, as well as for reference for technical and scientific information. **Please take detailed notes** in class during our lectures and discussions. Also, **please ask questions** about any material that you need clarified. Quizzes & homeworks also may occur periodically throughout the semester at my discretion.

Cell phones should not be used during class (i.e., no text messaging; *you may certainly answer emergency calls*). Laptops should be used for classroom purposes only (not to surf the Internet, chat with friends, or check email). Using a laptop to take notes generally doesn't work well in this class as it is important for you to also construct annotated drawings of key figures. You may use laptops to do *Google Earth* activities.



GRADES

Final grades will be based on 2 exams, technical projects (GIS Day project, 3 mini-projects, & the newspaper article project), homework assignments, and participation/effort. All materials to be turned in for a grade must be clearly written/typed and **stapled**; late/messy/unstapled assignments will not be accepted and will receive a "0". Make-up exams will not be given unless there is a documented emergency or unless we have arranged a make-up exam in advance because of exceptional circumstances. The participation/effort grade is entirely subjective and will not be open for debate. ***Use of any figures/photos/text/etc. in your projects without written permission from the source will result in your final course grade being lowered by one letter grade for each figure/photo/section of text.***

Subjective Grading *(example for written reports, projects, & presentations)*

A-excellent; all the qualities of a "B" report/presentation plus it should be exceptionally thought-provoking, original, and lucid in content, grammar, and manner of presentation

B-very good; clearly organized, consistent use of grammar, punctuation, and spelling, good detail with some insight, no inaccuracies in content

C-ok; organization and content apparent, but "fuzzy", some detail, but a tendency to ramble, shows some research, but does not develop/explain the ideas/concepts, minor mechanical errors (e.g., grammar, punctuation, and spelling), few inaccuracies in content

D-fair; numerous mechanical errors, several inaccuracies in content, inconsistent and confusing organization

F-unacceptable; major mechanical errors, poorly organized, under-developed explanations, numerous inaccuracies in content, unreferenced material

Percent of Final Grade		Grading Scale*
Exam #1	20.0%	A >90%
Exam #2	20.0%	B 80-89%
GIS Day project	20.0%	C 70-79%
Newspaper article project	15.0%	D 60-69%
3 mini-projects	12.0%	F <60%
Assignments	8.0%	*I reserve the right to adjust the grading scale up slightly (benefitting you!), if warranted by the class grade distribution.
Participation/effort	5.0%	

Note that grades are based on a weighted average, not a straight average based on points. I calculate your grades automatically and can provide you up-to-date information on your grades at any time. It is important not to wait until the last month of class to become concerned about your grade.

ACADEMIC INTEGRITY

Any attempt to gain an unfair advantage over other students in the class will be handled in accordance with established University procedures as described in the Academic Handbook:

Academic Handbook section on Academic Dishonesty:
http://www.depauw.edu/univ/handbooks/dpuhandbooks.asp?ID=101&parentid=100

Note: From the section on Types of Academic Dishonesty, *"Students are responsible for knowing the academic integrity policy and may not use ignorance of the policy as an excuse for dishonesty."*

Writing Center Information Regarding Plagiarism:
http://www.depauw.edu/admin/arc/W-center/plag.asp

ATTENDANCE

Attendance (and participation) is required and will be monitored. Should you know that you will be absent (e.g., health issue regarding yourself or immediate family, athletic obligation, etc), please see me in advance (see the Student Handbook for the University policy on attendance). **If you are ill, please do not come to class (wait until you are without a fever for 24 hrs without medication)**. Contact me via email before class, and we'll make arrangements to make up assignments.

You are expected to be in class the day before and the day after vacation (e.g., Fall Break).

KEYS TO SUCCESS IN THIS COURSE:

1. **Read materials** in a distraction-free environment and in advance of lecture/discussion over that material. As you're reading, carefully note any questions that you have and bring them up for discussion in class.
2. **Ask Questions**. The old adage that "*the only stupid question is one that is unasked*" is TRUE! It is essential to ask questions to clarify any concepts that you do not understand. PLEASE do not be too shy, embarrassed, intimidated, afraid, etc. to ask questions.
3. **Take Good Notes**. Students with complete notes will be far less likely to struggle in discussing material, taking quizzes/exams, and/or in creating their technical materials. Try to write down the key material from the lecture/discussions and include as many sketches as possible. Rewriting your notes will make them more legible and orderly, plus it will help you focus on areas that are still unclear (topics for future discussions!). Be careful of falling into "*TV-watching mode*", as it is easy to look at the pictures and not take down any notes.
4. **Know the Key Terms** (these are bold in the chapter text and are defined in the **Glossary**). If I use a term that you don't understand, PLEASE ASK me to define it.
5. **Check out the Internet**. You can use a search engine to find web sites that relate to topics that we are currently studying. We also will be using Google Earth (http://earth.google.com) Geotours some throughout the semester. Geotours can be found at: http://www.wwnorton.com/college/geo/egeo3/GeoTours.aspx
6. **Use the library**. There are many books (including additional introductory geology & environmental science textbooks) & articles in the library that pertain to the topics we will be discussing…use them. Also, we have a great interlibrary loan system for materials that our library does not carry.
7. **Work on the Material on a Regular Basis**. Procrastination is your enemy. First, you will be unprepared for your presentations/discussions throughout the semester. Second, your writings and technical work will directly reflect your effort & preparation. Concentrated effort over a short period of time rarely works as good as a sustained effort over the "long haul".
8. **Create your own Study Aids**. Some people like to highlight text in the chapter, others like to make flash cards, and still others like to study in groups and discuss the material. Feel free to experiment with what works for you. In addition, the Academic Resource Center in Asbury Hall (1st floor) has tutors and trained people available to help you refine and improve your study habits and techniques.
9. **Study for the Exam** as an Individual and then as a Group. Again, different people study in different ways. I've found that it helps to study as an individual first (thinking about what concepts were emphasized in each chapter & lecture), then get together with others and study as a group (e.g., asking each other questions, brainstorming about test material, etc.).

Feedback:
I usually need at minimum of a week to return work (perhaps longer for exams/large assignments). I try to write detailed comments on the papers that I return to you. I will "go over" all exams with you and homeworks as needed. Please ask questions in class or stop by my office if a concept is not clear or if you have a question on how I graded your work.

Additionally, you need to give me feedback about how the course is going. It is important that you "rein me in" if I go too fast or if I haven't explained something well enough. **Ask questions!!!**

ORDER OF TOPICS

Week Starting	Topics (Last Day to Withdraw 10/15)	Reading *(prior to class)*
1: 8/25	Downloading Google Earth Syllabus/ Google Earth Interface	6 7-15
Google Earth Content		
2: 8/30	Creating & Editing Placemarks Formatting Placemarks Placemark Images/URLs/Videos	16-21 22-24 25-29
3: 9/6	Paths & Polygons Image Overlays/Photo Overlays Tours & Animations	30-35, 36-39 40-45, 46-49 50-55, 56-59
4: 9/13	Importing GPS Data into Google Earth *Exam Review* **Exam #1 - 09/17/2010**	60-61 - -
Part II-Geoscience/Environmental Science Content		
5: 9/20	Plate Tectonics (Geotour #2) Plate Tectonics Plate Tectonics	Chap 2 Chap 2 ***Geotour 2***
6: 9/27	Volcanoes (Geotour #5) Volcanoes Volcanoes	Chap 5 Chap 5 ***Mini-Project 1 & Geotour 5***
7: 10/4	Deformation & Mountains (Geotour #9) Deformation & Mountains Deformation & Mountains	Chap 9 Chap 9 ***Geotour 9***
8: 10/11	Global Change (Geotour #19) Global Change Global Change	Chap 19 Chap 19 ***Mini-Project 2 & Geotour 19***
9: 10/18	**Fall Break**	
10: 10/25	Class Topic (Geotour #) Class Topic Class Topic	Topic Chapter Topic Chapter /***GIS Project Topic*** ***Geotour #***
11: 11/1	Work on GIS Project Work on GIS Project Work on GIS Project	- - -
12: 11/8	Work on GIS Project Work on GIS Project Work on GIS Project	***GIS Project Rough Draft*** - -
13: 11/15	Work on GIS Project **GIS Day Poster Session** Article Project	***Plot GIS Project Poster*** ***11/17, 3:00-5:00 pm, Atrium*** -
14: 11/22	Article Project **Thanksgiving Break** **Thanksgiving Break**	- - -
15: 11/29	Article Project Article Project Article Project	***Draft Due Tues 11/30 @ noon*** ***Class Review*** ***Class Review***
16: 12/6	Class Topic (Geotour #) Class Topic Class Topic	Topic Chapter Topic Chapter ***Mini-Project 3 & Geotour #*** ***& Article***
Exam #2: *Wed, Dec 15, 2010 8:30- 11:30 am, Rm 223 Julian*		
Note 1: These topics and exam times are subject to change. **Note 2: GIS Project poster plotting will be charged $1.25/sq ft to your student accounts. This is actual cost (you're welcome to print your posters elsewhere if you choose).**		