August 27, 2015

GEOSC 303
Introduction to Environmental Geology
Fall 2015

Lecture (219 Hammond): TTh 9:05-9:55 am
Lab section I (341 Deike): M 1:25-3:20 pm
Lab section II (341 Deike): M 3:35-5:30 pm

Instructors
David Bice | 309 Deike | dmb53@psu.edu
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Office hours by appointment

Teaching Assistants
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Course description and overview

Environmental geology encompasses the interactions between humans, ecosystems, and Earth. In this course, we will address the grand challenges faced by a growing population inhabiting a planet with finite resources. By studying some selected examples, you will be able to reach the following goals:

- Understand the Earth processes controlling water, soil, mineral, and energy resources
- Assess the environmental and human consequences of resource exploitation
- Evaluate risk associated with earthquake, flood, landslide, and volcanic hazards

In addition, by working with real-world research problems, you will have the opportunity to:

- Observe critically
- Think quantitatively
- Communicate clearly and concisely

The class is scheduled for 2 lectures and 1 lab per week. The lectures will draw partly from the textbook, but also significantly from outside material. It is critical to 1) attend class regularly and 2) come prepared for each class by reading the appropriate sections as assigned.

Assignments and grading

There are five components that we will use to assess your comprehension of Environmental Geology and to assign grades.

Field trip reports (25%): We have planned **4** field trips for this class to visit nearby sites to learn about and investigate environmental issues. These field trips will be on Mondays from 1:25 to 5:30 pm, taking up both lab sections. In return for taking the whole afternoon, the following Monday will be free. Field trip attendance is mandatory in order to receive a grade for the field trip report. Your notebooks will be collected and graded immediately following each trip, then returned the next day so that you can complete the report, which will be due in class the following Tuesday. If you have a conflict on Monday afternoons, please see Dr. Bice or Dr. DiBiase as soon as possible.

Quizzes (20%): Throughout the semester there will be **11** short (~5 minutes each) quizzes that will draw primarily on material presented in lecture. The lowest quiz score will be dropped, and all others will be weighted equally.

Exams (20%): There will be **2** exams that will cover the readings, lectures, quizzes, field trips, and lab activities. The first exam will focus on the first half of the class, while the second exam will focus on the second half of the class. Both exams will be weighted equally.

Labs (15%): There will be **3** lab exercises during this class; each will involve hands-on observations, analysis, and reporting. Lab reports will be turned in one week after the lab activity.

Discussion papers (20%): There will be **5** discussion papers assigned throughout the semester. These will consist of a combination of journal articles, book chapters, podcasts, and current events, on which we will devote an entire class period to a group discussion. For each discussion paper, you will be responsible for either a short written response paper, or organizing a group presentation to lead the class in discussion.

Grading rubric: Field trip reports, laboratory exercises, and discussion papers will be assessed on both content and presentation. Note that one of the most important scientific skills is to be able to synthesize concepts and information, and apply these in a new situation or to an unknown problem. Thus, we are particularly looking for how well your support your conclusions with concepts we covered in class or covered by the text. There is not necessarily a 'right' answer.

Here are some rough benchmarks:
A+ (100%): Outstanding explanation with superior supporting information; unusual insights and flashes of brilliance; creative and original analyses and thoughts

B+ (~88%): Good solid job on explanation, with excellent support from examples, data, figures, etc.; excellent reasoning, or excellent explanations

C+ (~78%): Satisfactory job; does what the assignment asks; decent reasoning or explanations; good support by data, figures, examples, etc.; overall, fair work

D+ (~68%): Decent explanation, but too general or some inaccuracies or flaws in reasoning or coverage is accurate but cursory; does not meet the minimum required for a complete answer

F (~58%): Does not effectively address assignment; fails to support assertions with data or examples; unclear explanations; inadequate understanding; major flaws in reasoning

Course Materials

Required textbook: Pipken, B.W., Trent, D.D., Hazlett, R.H., and Bierman, P., *Geology and the Environment, 7th Edition* (ISBN 9781133603986)

Angel website: The Angel website will be the primary repository for course materials, including lecture notes and slides, and any assigned outside reading or supplementary materials.

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Academic Integrity

While collaboration is encouraged on laboratory, field, and discussion paper exercises, all work turned in should be your own. In general, you should be able to reproduce/explain any work you turn in.

Written assignments will sometimes require the use of external source material to support your arguments. While cases of intentional plagiarism sometimes occur (such as purchasing or wholesale copying of term papers), more often than not plagiarism is the unintentional result of careless research and improper citation. Plagiarism is simply defined as the act of stealing or passing off the ideas, words, or creations of another person as your own. When in doubt, cite the reference. If you still are not sure, please come see one of the instructors or your TA. We will be more than happy to help you decide when and how to reference source material properly.

Finally, you will be penalized for cheating. Students who present other people's work as their own will receive at least a 0 on the assignment and may well receive an F in the course. For more details, please see: Earth and Mineral Sciences Academic Integrity Policy, which this course adopts: http://www.ems.psu.edu/current_undergrad_students/academics/integrity_policy

Accommodations for Students with Disabilities

Penn State welcomes students with disabilities into the University's educational programs. Every Penn State campus has an office for students with disabilities. The Office for Disability Services (ODS) website provides contact information for every Penn State campus: (http://equity.psu.edu/ods/dcl). For further information, please visit the Office for Disability Services website (http://equity.psu.edu/ods).

In order to receive consideration for reasonable accommodations, you must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation based on the documentation guidelines (http://equity.psu.edu/ods/guidelines). If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with an accommodation letter. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. You must follow this process for every semester that you request accommodations.

Assistance with textbooks:

Penn State honors and values the socioeconomic diversity of our students. If you require assistance with the costs of textbooks for this course, contact the Office of Student and Family Services (120 Boucke Building, 863-4926, http://studentaffairs.psu.edu/familyservices/). For additional need related to socioeconomic status please visit sites.psu.edu/projectcahir.

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Attendance policy

Quizzes and exams will pull much material from lectures, thus attendance is critical. That being said, students who miss class for legitimate reasons will be given a reasonable opportunity to make up missed work. Whenever possible, students participating in University-approved activities should submit to the instructor a Class Absence Form available from the Registrar's Office: http://www.registrar.psu.edu/student_forms/, at least one week prior to the activity.

Some relevant information on PSU attendance policies:
Attendance Policy 42-27: http://senate.psu.edu/policies/42-00.html#42-27
Attendance Policy E-11: http://www.psu.edu/oue/aappm/E-11.html
Conflict Exam Policy 44-35: http://www.psu.edu/ufs/policies/44-00.html#44-35
Illness Verification Policy: http://studentaffairs.psu.edu/health/welcome/illnessVerification/
Religious Observance Policy: http://www.psu.edu/oue/aappm/R-4.html
Office of Student and Family Services: http://studentaffairs.psu.edu/familyservices/

Weather delays

Campus emergencies, including weather delays, are announced on Penn State News: http:/news.psu.edu/ and communicated to cellphones, email, the Penn State Facebook page, and Twitter via PSUAlert (Sign up at: https://psualert.psu.edu/psualert/).