Course Syllabus
Environment Earth

EARTH 100 (3 credits, GN course)
Spring 2015 - Penn State Brandywine

Overarching Course Goal -- For students to understand, communicate examples, and make informed decisions relating to big ideas and supporting concepts of Earth science (in other words, for you to be an Earth-literate person!)

See http://www.earthscienceliteracy.org/document.html

Instructor: Dr. Laura A. Guertin (“Dr. G”)  Office: TMZKO CLASS 102
Office phone: (610) 892-1427  Email: uxtg3@psu.edu
Office hours: Tuesdays and Thursdays, 2:30-3:30PM, Wednesdays 10:30AM-12:30PM
Weather & Emergency Closing Information: http://brandywine.psu.edu/weather.htm
Web site: http://cms.psu.edu/ (ANGEL), http://sites.psu.edu/psubwearth100
Lecture: Section 01: TR 8:30-9:45AM, Tomezsko Classroom Building, Room 101
Section 02: TR 10:00-11:15AM, Tomezsko Classroom Building, Room 101

Textbook to purchase (required): (1) Why Geology Matters, by Doug Macdougall

Dr. G’s philosophy on higher education: ***Students are responsible for their own learning!!!*** I am here to help facilitate your science education to the best of my ability, but you must do your part as well. It is up to YOU to come to class, to take notes, to ask questions, to complete assignments and readings by deadlines, and to be an active learner! It is up to YOU to take advantage of this opportunity!
SECONDARY COURSE GOALS
In addition to the overarching course goal on the front page of this syllabus, the following goals are a part of EARTH 100. In other words, after completion of this introductory Earth science course, a student will be able to:

- Analyze and evaluate scientific data to create a conclusion about geologic processes
- Describe spatial and temporal properties and processes with our planet and its formation
- Provide examples of the scientific, interdisciplinary nature of studying our Earth (geological, biological, physical, chemical)
- Assess news with respect to geologic events or Earth science in general; read and interpret articles in the news
- Articulate scientific arguments for why geology matters

Remember, we will be matching all of our course activities and learning to The Big Ideas and Supporting Concepts of Earth Science (Earth Science Literacy Principles, March 2013, available at: http://www.earthscieliteracy.org/document.html). The ESLP present the big ideas of Earth science that all citizens should know, determined by the Earth science research and education communities. During the semester, be prepared for us to connect our course content to:

- Big Idea 1: Earth scientists use repeatable observations and testable ideas to understand and explain our planet.
- Big Idea 2: Earth is 4.6 billion years old.
- Big Idea 3: Earth is a complex system of interacting rock, water, air, and life.
- Big Idea 4: Earth is continuously changing.
- Big Idea 5: Earth is the water planet.
- Big Idea 6: Life evolves on a dynamic Earth and continuously modifies Earth.
- Big Idea 7: Humans depend on Earth for resources.
- Big Idea 8: Natural hazards pose risks to humans.
- Big Idea 9: Humans significantly alter the Earth.

AT THE END OF THIS COURSE…. You will be a master at Earth science literacy, which means you will have an understanding of the Earth’s influence on you, as well as your influence on the Earth!

Now for all the necessary, important information…. 

What will be expected of you?

I have worked hard to make this the most effective and convenient educational experience possible. How much and how well you learn is ultimately up to you. You will succeed if you are diligent about keeping up with the class schedule, and if you take
advantage of opportunities to communicate with me, as well as with your fellow students.

**Attendance** – You MUST attend every class session, as it will not be possible to make up the majority of the in-class experiences. Because this is a very interactive course where you will be working with other students on graded exercises each week, each in-class meeting will have little content instruction. In some cases, you will not be able to make up the in-class work and will have to receive a zero for the assignment that day. If you have a true emergency, I need to be notified BEFORE the scheduled class time. Note that I do not provide notes or PowerPoint slides to students – you will be responsible for connecting with others in the class to catch up on the content you missed.

**A note on cell phones** - There is no reason a cell phone should be on during our meeting times. Turn your cell phones off **before** lecture/lab begins. No texting during class, either – your cell phone should not come out at all during class time. I reserve the right to dismiss you from class if you and your cell phone are a distraction to myself or to others.

**Late assignments** - All assignments must be turned in **on time** – absolutely no assignments will be accepted late. **Do not use “computers” as an excuse for not turning in an assignment on time** (such as the USB drive ate my paper, I couldn’t log in from home, Google/ANGEL was down, etc.). You will be given more than enough time to complete and turn in assignments; I will not make exceptions if you wait until 5 minutes before an assignment is due to hand it in.

  Unless I tell you otherwise, all assignments will be turned in via ANGEL. **DO NOT** place paper copies of assignments in my campus mailbox or under my office door. I do not give any makeup assignments, for this is not fair to everyone that is ready to participate in class and hand in everything on time.

**Final exam** - There will be a take-home, online cumulative final exam (open note, open book, but not open collaboration!) during final exam week. The final exam will appear in ANGEL on Monday, May 4, at 8:30AM. You will have until Thursday, May 7, at 10:30AM to complete the final. You must complete the exam on your own and not talk about the exam with others – no working together or sharing/exchanging answers. You will submit your exam in the ANGEL drop box, either as a MS Word or PDF document or a Google Doc exported as MS Word or PDF.

**Note to students with disabilities**: In accordance with the Americans with Disabilities Act of 1990, it is Penn State’s policy to provide reasonable academic adjustments for students with documented disabilities. If you have a disability-related need for modifications in this course, contact Sharon Manco, 610-892-1461, or sam26@psu.edu. This notification should occur by the end of the first week of the semester. Students may visit www.equity.psu.edu/ods/ for complete information.
Required Course Materials

In addition to the required textbook, you will be provided technology equipment (specifically iPads/laptops) to borrow for in-class exercises. You will be assigned specific equipment you must share with your assigned partner(s) in class. You are responsible for treating the equipment with respect. Any misuse of equipment will deny you the opportunity to continue to use the equipment and complete the remainder of the graded exercises (in other words, you will receive a zero for that portion of your grade once you lose access to the equipment).

Technical Requirements

ANGEL will be used in this course for the gradebook and communication. If you are not familiar or comfortable with ANGEL, please review the online ANGEL tutorials to learn how to most effectively use Penn State’s course management software (http://www.berks.psu.edu/StudentServices/IT/ANGELabout.htm). There will be several folders and links for you to access relating to various class discussions and assignments.

You must access your Penn State email as well. PSU email is the designated form of official communication between Penn State faculty and their students. I will be making use of email as reminders for deadlines, follow-ups to classroom discussions, clarifications on assignments, etc. I will not send useless messages – only ones that directly relate to the class and to assist your learning. All emails I send to the entire class will be done through the ANGEL email system.

You will complete an assignment with Zotero this semester (http://www.zotero.org/). We will have two sessions with the campus librarians to show you how to use this web-based program to organize your citations and annotations for the semester’s Literacy Project.

Green Initiatives in EARTH 100

How can we be a course in the discipline of Earth/environmental science and not engage in good environmental practices? You will receive limited paper handouts from me beyond this syllabus (it is still a University policy that faculty must distribute written copies of course syllabi to students) and a copy of the Earth Science Literacy Principles. All materials for the course will be delivered to you online via ANGEL and at http://sites.psu.edu/psubwearth100/. You will not be turning in anything on paper – all work submitted will be electronic, mostly through ANGEL.

However, you are NOT discouraged from taking notes on paper! There will be a few times where I will lecture about some vocabulary and concepts where taking notes in class may be best suited to your learning. You are by all means encouraged to take
notes and to use paper as much as necessary to take notes during the in-class exercises.

---

**Grading**

Your grade in EARTH 100 will be based on a percentage system, out of 100%.

- 30% - Responses to *Why Geology Matters* (submit in ANGEL)
- 30% - Literacy Project (complete in Zotero and submit in ANGEL)
- 15% - TED videos & in-class exercises (submit online via iPads/laptops)
- 10% - *What Should We Be Worried About?* Essay (start in class)
- 15% - Final Exam (take home, submit online)

So that you know where you stand in the course throughout the semester, all grades will be posted in ANGEL with each assignment and totaled in the ANGEL gradebook. You will be able to track your progress and calculate your average as the course goes along.

The final grades will be assessed at the end of the semester as follows (% of total pts):

- A = 96 to 93.0; A- = 92.9 to 90.0; B+ = 89.9 to 87.0; B = 86.9 to 83.0; B- = 82.9 to 80.0; C+ = 79.9 to 77.0; C = 76.9 to 70.0; D = 69.9 to 60.0; F = 59.9 and below
- Do not expect me to drop any grades or curve any grades during or at the end of the semester. Extra credit is not available.

**Questions/responses from *Why Geology Matters* book chapters and TED videos** – For these weekly exercises, each question will be graded on a scale of 0-3. A score of zero is if you did not participate by the deadline. A score of 1 is for people that clearly just submit something without any thought and no connection to the book chapter/video (this could also result in a score of zero) to try to get credit. A score of 2 is for people that answer the question specifically and do not provide further information or opinions. A score of 3 will be awarded to students that clearly have thought about what is being asked, that include information from the readings/video, and voice their point-of-view on the subject. See our website (http://sites.psu.edu/psubwearth100/) for a full explanation of the *Why Geology Matters* exercises. Note that you will be responding to the book questions individually, but you will work with and receive the same grade as your assigned partner for the TED videos.

**Academic Integrity**

All students are expected to act with civility, personal integrity; respect other students’ dignity, rights and property; and help create and maintain an environment in which all can succeed through the fruits of their own efforts. An environment of academic integrity is requisite to respect for self and others and a civil community.
Academic integrity includes a commitment to not engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty include cheating or copying, plagiarizing, submitting another persons’ work as one’s own, using Internet sources without citation, fabricating field data or citations, “ghosting” (taking or having another student take an exam), stealing examinations, tampering with the academic work of another student, facilitating other students’ acts of academic dishonesty, etc.

Students charged with a breach of academic integrity will receive due process and, if the charge is found valid, academic sanctions may range, depending on the severity of the offense, from F for the assignment to F for the course.

The University’s statement on academic integrity, from which the above statement is drawn, is available at: http://www.psu.edu/dept/oue/aappm/G-9.html

OK, so WHAT DOES THIS ALL MEAN… DO NOT EVEN THINK OF CHEATING!!! Do not copy from your fellow students, do not plagiarize (from books, the internet, from yourself, etc.). I will vigorously pursue any suspicions I have of academic integrity violations! If I suspect a violation, I will first have an informal conversation with you to discuss the issue. Then, depending on the outcome of that conversation, I will have another conversation with you that requires us both to sign an academic integrity report form that will be turned in to the campus academic integrity committee. I will determine what I feel is appropriate punishment for your violation of PSU’s academic integrity policy. The sanction may be from failing the assignment with a grade of zero to failing the course, depending on the severity of the violation.

Breakdown of topics covered during each class meeting

- note that this syllabus is subject to change with prior notification and immediately after weather emergencies

I am part of a research team at University Park, and I serve on committees at the national level. Unfortunately, not all of my semester meetings have been scheduled yet. I will do my best to travel to UP around our class times, but please be prepared for changes in our schedule if necessary. We may have a class meeting that I pre-record for you to view using a Google Hangout instead of meeting face-to-face to lessen the disruption in our schedule.

If class is cancelled because of a weather-related campus closure or delayed opening, I will email you with work you are responsible for in place of our class meeting. In the event of a weather emergency, you may obtain official information on the status of classes and the campus by:

- Signing up for PSUAlert (https://psualert.psu.edu/psualert/) or on Twitter at @PSUAlertBW
• Checking the Penn State Brandywine website for announcement (www.bw.psu.edu)
• Following the campus Facebook page & watch for alerts: www.facebook.com/PennStateBrandywine
• Tuning in to radio station KYW News radio (1060 AM)
• Watching WTXF-Fox 29 TV beginning at 6:00 a.m.

In addition to the textbook, all course materials and announcements can be found on the course website: http://sites.psu.edu/psubwearth100/.

*NOTE* that all assignments in this course are due on Mondays, Wednesdays and Fridays at 11PM (except the final exam). We will always have the responses to *Why Geology Matters* chapters due on Mondays, and we will discuss each in the following class period with an activity.

► Week 1

**T, 01/13:** Intro. to Earth science literacy, what do you want to learn in this course?, syllabus & academic integrity review  
**ASSIGN:** Read Preface in *Why Geology Matters*  
***Bring book to class on Thursday***

**R, 01/15:** TED discussion/process of science, Earth system science, iPad orientation  
**ASSIGN:** Read Ch. 1 in *Why Geology Matters*, complete #1 (in ANGEL)

► Week 2

**DUE (11PM, Mon., 01/19, ANGEL):** *Why Geology Matters* #1 (on Ch. 1)  
**ASSIGN:** Read Ch. 2 in *Why Geology Matters*, complete #2 (in ANGEL)

**T, 01/20:** Geologic time (exercise), Earth history, annotated bibliography  
**ASSIGN:** Literacy Project (complete in Zotero)  
**ASSIGN:** Create Zotero account at http://www.zotero.org/

**R, 01/22:** Zotero training with campus librarians [Meet in Library]  
**DUE (11PM, Fri., 01/23, Zotero):** Citation & annotation (total = 1 min/10)
Week 3

**DUE (11PM, Mon., 01/26, ANGEL):** *Why Geology Matters* #2 (on Ch. 2)
**ASSIGN:** Read Ch. 3 in *Why Geology Matters*, complete #3 (in ANGEL)

**T, 01/27:** Layers of Earth, solar nebula theory, exercise on the planets

**R, 01/29:** TED video & response, iPad exercise on solar system

**DUE (11PM, Fri., 01/30, Zotero):** Citation & annotation (total = 2 min/10)

Week 4

**DUE (11PM, Mon., 02/02, ANGEL):** *Why Geology Matters* #3 (on Ch. 3)
**ASSIGN:** Read Ch. 4 in *Why Geology Matters*, complete #4 (in ANGEL)

**T, 02/03:** Craters and impacts, impacts on Earth (iPads)

**R, 02/05:** TED video & response, laptop exercise with Google Mars

**DUE (11PM, Fri., 02/06, Zotero):** Citation & annotation (total = 3 min/10)

Week 5

**DUE (11PM, Mon., 02/09, ANGEL):** *Why Geology Matters* #4 (on Ch. 4)
**ASSIGN:** Read Ch. 5 in *Why Geology Matters*, complete #5 (in ANGEL)

**T, 02/10:** First 2 billion years, stromatolites, BIFs, Discovering Plate Boundaries exercise

**R, 02/12:** TED video & response, more on Biosphere 2

**DUE (11PM, Fri., 02/13, Zotero):** Citation & annotation (total = 4 min/10)

Week 6

**DUE (11PM, Mon., 02/16, ANGEL):** *Why Geology Matters* #5 (on Ch. 5)
**ASSIGN:** Read Ch. 6 in *Why Geology Matters*, complete #6 (in ANGEL)

**T, 02/17:** Plate tectonics and hot spots, Hawaii exercise

**R, 02/19:** Zotero Part 2, with campus librarians [Meet in Library]

**DUE (11PM, Fri., 02/20, Zotero):** Citation & annotation (total = 5 min/10)
Week 7

DUE (11PM, Mon., 02/23, ANGEL): Why Geology Matters #6 (on Ch. 6)
assign: Read Ch. 7 in Why Geology Matters, complete #7 (in ANGEL)

T, 02/24: New Madrid Zone, earthquake exercise, Part A

R, 02/26: TED video & response, Penn State Brandywine seismometer data, Part B
DUE (11PM, Fri., 02/27, Zotero): Citation & annotation (total = 6 min/10)

Week 8

DUE (11PM, Mon., 03/02, ANGEL): Why Geology Matters #7 (on Ch. 7)
assign: Read Ch. 8 in Why Geology Matters, complete #8 (in ANGEL)

T, 03/03: Supercontinents, mountain belts, paleogeographic reconstructions

R, 03/05: TED video & response, synthetic “life” with 3D printing
DUE (11PM, Fri., 03/06, Zotero): Citation & annotation (total = 7 min/10)

*** SPRING BREAK! NO CLASSES! ENJOY THE EARTH! ***

Week 9

DUE (11PM, Mon., 03/16, ANGEL): Why Geology Matters #8 (on Ch. 8)
assign: Read Ch. 9 in Why Geology Matters, complete #9 (in ANGEL)

T, 03/17: Milankovitch, ice cores, oxygen isotopes

R, 03/19: TED video & response, ice core data exercise
DUE (11PM, Fri., 03/20, Zotero): Citation & annotation (total = 8 min/10)

Week 10

DUE (11PM, Mon., 03/23, ANGEL): Why Geology Matters #9 (on Ch. 9)
ASSIGN: Read Ch. 10 in *Why Geology Matters*, complete #10 (in ANGEL)

T, 03/24: global warming, Lake Nyos, methane

R, 03/26: TED video & response, seed vault

 **DUE (11PM, Fri., 03/27, Zotero):** Citation & annotation (total = 9 min/10)

► Week 11

 **DUE (11PM, Mon., 03/30, ANGEL):** *Why Geology Matters* #10 (on Ch. 10)

 **ASSIGN:** Read Ch. 11 in *Why Geology Matters*, complete #11 (in ANGEL)

T, 03/31: large igneous provinces, ocean anoxia

R, 04/02: TED video & response, ocean concerns

 **DUE (11PM, Fri., 04/03, Zotero):** Citation & annotation (total = 10/10)

► Week 12

 **DUE (11PM, Mon., 04/06, ANGEL):** *Why Geology Matters* #11 (on Ch. 11)

 **ASSIGN:** Read Ch. 12 in *Why Geology Matters*, complete #12 (in ANGEL)

T, 04/07: Pinatubo, supervolcanoes, Yellowstone

R, 04/09: TED video & response, rewilding

 **DUE (11PM, Fri., 04/10, ANGEL):** Final listing of Zotero citations/annotations

 **ASSIGN:** Reflection for Literacy Project

► Week 13

 **DUE (11PM, Mon., 04/13, ANGEL):** *Why Geology Matters* #12 (on Ch. 12)

 **ASSIGN:** Read Ch. 13 in *Why Geology Matters*, complete #13 (in ANGEL)

T, 04/14: geologic time, life/extinctions, *Tiktaalik*

R, 04/16: TED video & response, de-extinction

 **DUE (11PM, Fri., 04/17, ANGEL):** Reflection for Literacy Project
Week 14

DUE (11PM, Mon., 04/20, ANGEL): Why Geology Matters #13 (on Ch. 13)

T, 04/21: Begin in class What Should We Be Worried About? Assignment
ASSIGN: What Should We Be Worried About? Essay
*** Complete first draft of essay outside of class

R, 04/23: Peer review essays in class
DUE (11PM, Fri., 04/24, ANGEL): What Should We Be Worried About? essay

Week 15

T, 04/28: Final review of current events, student topics (fracking, climate change, etc.)

R, 04/30: Revisit Earth science literacy, final exam review

FINAL EXAM -- Take home/online

Please do NOT go by the date/time that is currently listed in eLion for your final exam for EARTH 100. You will have a take-home final that you will submit in ANGEL. Both EARTH 100 sections will have their final due on the same date/time (Thursday, May 7, 10:30AM). Failure to submit the final exam online by the deadline in a format that I can open/read (MS Word or PDF) will result in a grade of zero for the final. There will be no make-up exam and no extra time or extensions for the deadline. The exam is to be an individual effort – no discussion the questions/responses or working with other students.
What this means… My lectures and course materials, including presentations, tests, assignments, outlines, and similar materials, are protected by copyright. You may take notes and make copies of course materials for your own use. You may not and may not allow others to reproduce or distribute lecture notes and course materials (including this syllabus) publicly whether or not a fee is charged without my express written consent. Similarly, you own copyright in any papers you write or projects you complete for this course. You will be notified ahead of time if you will be required to share the results of your work with a public audience (such as dissemination through a public VoiceThread, online posting of your podcast, writing a blog post, etc.).