



# Course Syllabus - **Natural Disasters: Hollywood vs. Reality**

EARTH 101 (3) GN, US  
**Fall 2006**

## **Penn State Delaware County**

Instructor: Dr. Laura A. Guertin (aka "Dr. G")

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Office hours: Mondays, Wednesdays, and Fridays 10AM-12 Noon

Lecture: 1:30PM – 2:20PM MWF in CLASS 101

Textbook: *An Inconvenient Truth*, by Al Gore (Rodale Press, 2006); other readings in ANGEL

**What's in store for you...** In this course, you will learn the science behind natural disasters and how disasters are portrayed in the media. You'll be working with real data sets for critical thinking and analysis. You'll be learning much of your science content through in-class and on-line exercises. You'll explore case studies of classic disasters in the past and present. You'll also have a chance to share your new disaster knowledge with others.

**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, to be an active learner! It is up to YOU to take advantage of the education I am providing you. It is your choice to sink or swim in this course. Remember, I can expect 2-3 hours of work outside of class for every hour you spend with me in class. That means in this summer course, you will be working every night for several hours to complete your required work. Remember, this is an entire semester course packed into three weeks!



## **COURSE GOALS!!!!**

I realize that 99.9% of the students that take my geoscience courses will never become professional geologists. This is why I design all my courses around skill-based goals, where you will acquire and/or further develop skills that will be applicable to you no matter what your future career. This is especially true in this EARTH course.

- **The scientific method and working with data sets:** You will be learning about the methods of science and participating in class activities and assignments that require critical thinking and analyzing science issues with various forms of scientific data.
- **Using technology:** You will be working with Microsoft Office and handheld technology throughout the semester to prepare you for the technology-focused world of employment.
- **Sharing your knowledge with others:** For the rest of your lives, you will always be a student and a teacher. You will also learn the course material better if you explain it to others in and outside of class. You will participate in roundtable forums on a disaster-themed topic.

## **Now for all the necessary, important information....**

### **My expectations of you...**

I expect every student to come to every class session on time and ready to go. You should have read the corresponding chapters and readings in ANGEL for each lecture BEFORE coming to class. Be sure to bring something to write with and your calculator to every lecture. I encourage everyone to ask questions and work with your fellow students in lecture. There will not be traditional assignments in this class. Your attendance and participation will strongly impact your performance and thereby your resulting grade.

- **Class Participation**

Class participation is required! This course is to be an interactive course, filled with questions, discussions, stories on your favorite dinosaur experience, etc. There is much we can learn from each other! Although I will be lecturing during much of this course, what you will be doing during class time is a vitally important aspect of how you will learn in this course – whether you be an “active” participant or just come to class and be a “passive” participant. You will also be working in groups during some lecture periods, which places on you serious responsibility to other students in the class. **ATTENDANCE IS STRONGLY ENCOURAGED**, and I will be looking for your presence at every class meeting. I will make exceptions when missing a class for legitimate emergencies when I am **notified AHEAD OF TIME** (such as health, family emergencies, etc.). If you miss lecture for any reason, I will expect you to get in touch with me **THE SAME DAY YOU MISS CLASS** and make up all the work that you missed *before* the next class meeting. You will also be responsible for getting in touch with a fellow student to get the notes for the work that you missed. I do not provide my lecture notes to anyone, since as you will soon see, our class periods

are much more discussion-based and focused on the work you complete outside of class.

- **Classroom Etiquette**

Let's work together on this one. Please do not have conversations going on with other students while I am lecturing. No passing notes, no reading the newspaper. **If I find that anyone is being too disruptive to too disrespectful to the students or myself, I reserve the right to dismiss you from the classroom.** You will then have to speak to me in my office before I will allow you back into my classroom. **NO FOOD OR BEVERAGES ARE ALLOWED IN CLASS 101 OR ANY COMPUTER ROOMS.** This is a school policy, not just mine. We'll be working with computers and many materials that cannot have any food or drink near them. **DO NOT SIT** in the last three rows of the classroom – there are plenty of seats for everyone in the middle and up front. And **do NOT get up and leave the room while I am lecturing.** We will be having class discussions where I want you to volunteer your interpretation and opinion on certain issues. Be open, be honest, and show respect for the opinions your fellow students have. The class will be much more enjoyable if we show respect for one another!

- **A note on cell phones:** There is no reason a cell phone should be going off in lecture. I can't tell you how disrespectful that is to have a cell phone interrupt me while I am lecturing. Turn your cell phone off before lecture begins. If your cell phone goes off during my lecture, I will dismiss you from the rest of class.
- **A note on laptops:** Laptops are NOT ALLOWED in my classes. I have seen such creative uses of laptops in the classroom – all uses except for taking notes. So you can thank your fellow students for showing me such disrespect that I am instituting this classroom rule. If you want all your notes on your laptop, you'll have to take notes the old-fashioned way and type them in later – a very good exercise to reinforce what you've learned.

**In a nutshell, it's all about respect!!!** I demand respect in my classroom – respect towards me, respect of students to students, and myself respecting the class. I will not tolerate disrespect in class, and neither should you!

- **ANGEL**

ANGEL will be used much in this course. If you are not familiar or comfortable with ANGEL, please set up an appointment with me ASAP so I can sit down with you and show you how to most effectively use Penn State's course management software. There will be several folders and links for you to access relating to various class discussions and assignments. The most "complex" use of ANGEL is where you will need to know how to download Microsoft files that I post, enter text/data, and then place the file in a dropbox folder I set up. Trust me, you will not survive this course if you don't use ANGEL.

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. Do not email me from an outside email account you might have (such as AOL or hotmail) – if you do, I cannot guarantee that I will receive that message. **ALL EMAILS REGARDING THIS COURSE NEED TO BE SENT THROUGH ANGEL IF YOU EXPECT ME TO RESPOND.** I will be making use of email as reminders for deadlines, follow-up to classroom discussion, clarification 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 at once will be done through the ANGEL email system. Please use professional etiquette when emailing me – don't use all lower-case letters, don't use abbreviations that you might use if you were going to IM someone, and please type your name at the end of the message.

- **Math**

Yes, folks, this is a science course, so there will be some math involved. But the math skills I'm expecting are basic. You should be comfortable with the following: graphing, unit conversions, setting up and solving ratios, and percentages.

- **Late Assignments**

In a nutshell, you will not be allowed to turn in assignments late during this course. It is your responsibility to stay on top of deadlines. **Do not use “computers” as an excuse for not turning in an assignment on time** (such as the disk ate my paper, I couldn't log in from home, AOL was down, etc.). 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 an ANGEL dropbox or ANGEL quiz. DO NOT place paper copies of assignments in my mailbox or under my office door. I will not be responsible for assignments not turned in via ANGEL.

- **Final Exam**

Yes, we will have a REQUIRED cumulative final for this course – but it won't be the traditional type of final. The final is on the last scheduled day of class (Monday, December 18<sup>th</sup>) starting at 2:30PM. The exam will be held in CLASS 101 and will be open note/open book.

## **What you can expect of me...**

I will be prepared every day with a full lecture and will start on time. I will keep you updated if there are to be any changes to the syllabus (for example, if the class wants to explore a topic further, I will be flexible!). I will make myself available during and outside of class to answer any question you may have – don't hesitate to ask anything! **I am here to help you IF you put in the effort and work yourself!** I will not only teach you “the material” but why we are learning it, the applicability of this course to your everyday lives. After approximately the first month, I should have all of your names memorized and I will recognize you by name during class discussions. I will 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. If you have a medical/family emergency and

cannot come to class or hand in an assignment, contact me **PRIOR** to see if there is a way to make up for missed work (please note that there are some in-class exercises where it will not be possible to make up the work). Again, I do not provide notes from my lectures if you miss lecture – you will have to get notes from someone else in the class.

### **In the end...**

You must have fun in this course! I give you my word that I will put as much effort and energy into this course as I possibly can, to make this an enjoyable summer session for you. In return, I hope you come to class with a positive attitude and open mind to new ideas and topics!

### **Note to students with disabilities**

Penn State does not discriminate against qualified students with documented disabilities in its educational programs. If you have a disability-related need for modifications in this course, contact Sharon Manco, 610-892-1461, 203A Main. This notification should occur by the end of the first week of the semester.

### **Grading**

Your grade for the semester will be based on miscellaneous exercises, a service project, and the final exam, for 411 points total. The breakdown is as follows:

100 points as 65% of final grade – Writing Assignments and Reporting on Disasters  
145 points as 25% of final grade – Follow-Ups and Syllabus Quiz  
25 points as 10% of final grade - Final Exam

The final grades will be assessed at the end of the semester as a % as follows:  
A = 96 to 93; A- = 92 to 90; B+ = 89 to 87; B = 86 to 83; B- = 82 to 80;  
C+ = 79 to 77; C = 76 to 70; D = 69 to 60; F = 59 and below

***\* Do not expect me to drop any grades, curve any grades, or round up any grades on individual assignments during or on the final average at the end of the semester. Extra credit is not available.***

### **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 off of your fellow students, do not share assignments, do not plagiarize (from books, the internet, from yourself, etc.). Be sure that you document all of your sources in the APA style. 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 to failing the course, depending on the severity of the violation. We will be reviewing academic integrity and plagiarism the first day.

To ensure that we do not have any accidental cases of plagiarism, we will be utilizing the Turnitin.com program to review all written assignments this semester. Before you turn in any graded work, you will run your assignments through this online plagiarism detection program. After you receive your report from Turnitin.com, then you can submit your work.

### **Breakdown of topics covered during each class meeting**

- *note that this syllabus is subject to change with prior notification*

Readings are to be completed BEFORE coming to the NEXT lecture. In addition to your textbook, readings will also be placed in ANGEL – it is your responsibility to check the folders in ANGEL corresponding to each week for the readings and supplemental internet links (if applicable).

► **Week 1** -- READ articles in ANGEL for this week, and complete the following:

**W, 09/06:** Introduction, academic integrity, natural disasters

**ASSIGN:** Take-home quiz (in ANGEL) on syllabus and academic integrity (located in the Info you NEED to SUCCEED folder)

**ASSIGN:** Set up your account in Turnitin.com

**F, 09/08:** Natural disasters and energy sources  
**DUE (8:30AM):** Take-home quiz (in ANGEL) on syllabus and academic integrity  
**ASSIGN:** Think About... Natural Disasters

► **Week 2** -- READ articles in ANGEL for this week, and complete the following:

**M, 09/11:** Natural disasters and energy sources

**W, 09/13:** Plate tectonics

**NOTE:** Your "Think About... Natural Disasters" should be submitted to Turnitin.com no later than today

**F, 09/15:** Plate tectonics

**DUE (11PM in ANGEL):** Think About... Natural Disasters

► **Week 3** -- READ articles in ANGEL for this week, and complete the following:

**M, 09/18:** Volcanic hazards

**ASSIGN:** Think About... Volcanic Hazards

**W, 09/20:** Volcanic hazards

**F, 09/22:** Volcanic hazards -- CLASS DOES NOT MEET

**WATCH:** Earth Revealed: Volcanism

**DUE (11PM in ANGEL):** Follow-Up: Earth Revealed

► **Week 4** -- READ articles in ANGEL for this week, and complete the following:

**M, 09/25:** Volcanic hazards

**NOTE:** Your "Think About... Volcanic Hazards" should be submitted to Turnitin.com no later than today

**W, 09/27:** Coastal hazards

**DUE (11PM in ANGEL):** Think About... Volcanic Hazards

**ASSIGN:** Think About... Coastal Hazards

**F, 09/29:** Coastal hazards -- CLASS DOES NOT MEET

**WATCH:** Earth Revealed: Waves, Beaches and Coasts

**DUE (11PM in ANGEL):** Follow-Up: Earth Revealed

► **Week 5** -- READ articles in ANGEL for this week, and complete the following:

**M, 10/02:** Coastal hazards

**W, 10/04:** Coastal hazards

**F, 10/06:** NO CLASS – STUDY DAY

**NOTE:** Your "Think About... Coastal Hazards" should be submitted to Turnitin.com no later than today

► **Week 6** -- READ articles in ANGEL for this week, and complete the following:

**M, 10/09:** Coastal hazards

**DUE (11PM in ANGEL):** Think About... Coastal Hazards

W, 10/11: Earthquakes

**ASSIGN:** Think About... Earthquakes

F, 10/13: Earthquakes -- CLASS DOES NOT MEET

**WATCH:** Earth Revealed: Earthquakes

**DUE (11PM in ANGEL):** Follow-Up: Earth Revealed

► **Week 7** -- READ articles in ANGEL for this week, and complete the following:

M, 10/16: Earthquakes

W, 10/18: Earthquakes

**NOTE:** Your "Think About... Earthquakes" should be submitted to Turnitin.com no later than today

F, 10/20: Earthquakes

**DUE (11PM in ANGEL):** Think About... Earthquakes

► **Week 8** -- READ articles in ANGEL for this week, and complete the following:

M, 10/23: Dr. G at GSA -- CLASS DOES NOT MEET

**WATCH:** "What is News?" and "Covering Disasters"

**ASSIGN:** Reporting on Disasters

W, 10/25: Dr. G reports on "disasterous" meeting

F, 10/27: Dr. G at UP -- CLASS DOES NOT MEET

**DUE (11PM in ANGEL):** Reporting on Disasters

► **Week 9** -- READ articles in ANGEL for this week, and complete the following:

M, 10/30: Flooding

**ASSIGN:** Think About... Flooding

W, 11/01: Flooding

F, 11/03: Dr. G at PA Campus Compact -- CLASS DOES NOT MEET

**WATCH:** Earth Revealed: Running Water I: Rivers, Erosion and Deposition

**DUE (11PM in ANGEL):** Follow-Up: Earth Revealed

► **Week 10** -- READ articles in ANGEL for this week, and complete the following:

M, 11/06: Flooding

W, 11/08: Flooding

**NOTE:** Your "Think About... Flooding" should be submitted to Turnitin.com no later than today

F, 11/10: Dr. G at ISSOTL -- CLASS DOES NOT MEET

**WATCH:** movie preview and explore resources at <http://www.climatecrisis.net/>

**READ (before next class):** textbook p. 1-41

**DUE (11PM in ANGEL):** Think About... Flooding

► Week 11 -- READ articles in ANGEL for this week, and complete the following:

**M, 11/13:** Climate

**ASSIGN:** Think About... Long-Term Climate Change

**READ (before next class):** textbook p. 42-79

**W, 11/15:** Climate

**READ (before next class):** textbook p. 80-125

**F, 11/17:** Dr. G at NCHC -- CLASS DOES NOT MEET

**WATCH:** Planet Earth: The Climate Puzzle

**DUE (11PM in ANGEL):** Follow-Up: Planet Earth

► Week 12 -- READ articles in ANGEL for this week, and complete the following:

**M, 11/20:** Climate -- Solar Irradiance exercise

**T, 11/21:** Climate -- Solar Irradiance exercise

**READ (before next class):** textbook p. 126-163

**DUE (11PM in ANGEL):** Follow-Up: Solar Irradiance

**W-F:** NO CLASSES – HAPPY TURKEY DAY!

► Week 13 -- READ articles in ANGEL for this week, and complete the following:

**M, 11/27:** Climate

**READ (before next class):** textbook p. 164-213

**W, 11/29:** Climate

**F, 12/01:** Climate -- CLASS DOES NOT MEET

**WATCH:** Planet Earth: Fate of the Earth

**READ (before next class):** textbook p. 214-259

**DUE (11PM in ANGEL):** Follow-Up: Planet Earth

► Week 14 -- READ articles in ANGEL for this week, and complete the following:

**M, 12/04:** Climate

**READ (before next class):** textbook p. 260-321

**W, 12/06:** Climate

**F, 12/08:** Climate

**DUE (11PM in ANGEL):** Think About... Long-Term Climate Change

► Week 15 -- READ articles in ANGEL for this week, and complete the following:

**M, 12/11:** Asteroid Impacts

**W, 12/13:** Tornados

**F, 12/15:** Fire

# **FINAL EXAM (cumulative)** will be held in CLASS 101 on Monday, Dec. 18<sup>th</sup>, 2:30PM – 4:20PM

You must be there to take the final! Remember that the final is open note, open book. If you show up late, you do not get any extra time to complete the final. If you do not show up at all, you will receive a score of zero on the final – no excuses allowed!



## **Questions for the Writing Assignments: Think About...**

### **Think About... Natural Disasters**

- 1) We've gone through and defined different types of "natural disasters." What do you think would happen to the planet if all natural disasters ceased to occur? Give me some generalizations, and give specifics for two different types of disasters and the impacts.
- 2) What are some of the technical difficulties you would expect to encounter if you tried to drill a hole to the center of the Earth?

### **Think About... Volcanic Hazards**

- 1) Explain VEI. Can an eruption with a low VEI rating kill thousands of people? How? Give details and an example.
- 2) Let's say you have joined the USGS volcanology team. You are to choose a volcano, establish a plan to monitor that volcano, and say how you would increase public understanding of that volcano. In addition, be sure to explain why you chose this particular volcano, what information you hope to get from your monitoring plan and how helpful it would be, and how would you get the word out if there were strong signals that an eruption were to occur.
- 3) What are the volcanic hazards to human health and the environment? Explain both.

### **Think About... Coastal Hazards**

- 1) What are the impacts of ordinary waves? Can we halt these impacts? Explain.
- 2) Should buildings be allowed next to the coastline on Atlantic and Gulf of Mexico barrier-island beaches? Should federal relief funds (taxpayer monies) go to homeowners who suffer losses from hurricane surge and waves?
- 3) Compare how many hours in advance we know where a tsunami will strike with how many hours it takes to evacuate cities along the Atlantic and Pacific coasts of the United States. Will an evacuation plan be effective on either coast? Explain.

### **Think About... Earthquakes**

- 1) Discuss the similarities between snapping your fingers and the earthquake movement of a fault.
- 2) Which would be the better of two bad choices for an urban area: a magnitude 6.5 to 7 earthquake every 15 years, or a magnitude 8 every century? Explain with detail.
- 3) Humans can trigger earthquakes - therefore, should we? Can we set off medium-size earthquakes in a controlled fashion that will prevent a large earthquake in an area? Discuss the pros and cons for earthquake control.

### **Think About... Flooding**

- 1) Why are flash floods so disastrous? Can you build in an area where a flash flood won't occur? Explain and give an example of building on an alluvial fan and an example of another location where you can or cannot build because of flash flooding.
- 2) Should channelization and levee construction be integral parts of U.S. flood prevention policy? Give details and examples.
- 3) What are the real "costs" (so I mean not just \$\$\$!) to the nation due to floods? Give an example from Chesapeake Bay and another example.

### **Think About... Long-Term Climate Change**

- 1) How can we learn about global climate history from Antarctica and ice cores? Explain the type of data we obtain and how we interpret it.
- 2) There are interesting parallels between Venus and early Earth's atmospheres. We know the earliest Earth had an atmosphere loaded with CO<sub>2</sub> in a runaway greenhouse climate. Where has Earth's CO<sub>2</sub> gone? Why does Venus still have so much CO<sub>2</sub>?
- 3) In terms of climate... what is the "fate of the Earth?"

**How your paper should look before you submit it to Turnitin.com and then the ANGEL dropbox:**

EARTH 101  
DUE: 10/01/2006

Jimmy Neutron  
jnn123@psu.edu

**Think About... Natural Disasters**

1) Here is where I will type my response to the first question. I do not need to retype the question. But I will need to cite information in my response, such as the peak streamflow measured in Ridley Creek was in September of 1999 at 8,000 cubic feet per second (USGS Water Resources of Pennsylvania, n.d.). Then I can have more information to fully complete my answer. After my response, then I will list my references.

USGS Water Resources of Pennsylvania. (n.d.). *USGS Surface Water for Pennsylvania, Peak Streamflow*. Retrieved August 20, 2006, from [http://nwis.waterdata.usgs.gov/pa/nwis/peak?site\\_no=01476480&agency\\_cd=USGS&format=html](http://nwis.waterdata.usgs.gov/pa/nwis/peak?site_no=01476480&agency_cd=USGS&format=html)

2) Here is where I will begin to type my second response. Of course, I did a very poor job on the first question. I need many more details to fully answer the question being asked. Remember, it is **QUALITY** of detail, not quantity of words! Notice, too, that I removed the hyperlinks from the Penn State email address and the website referenced above. And yes, that is APA formatting for the in-text and list of references.