

Course Syllabus - **Biodiversity and Earth History**

**GEOSC 021 (3) GN
Spring 2004**

Penn State Delaware County

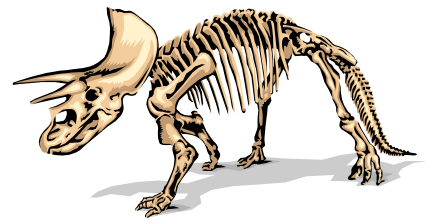
Instructor: Dr. Laura A. Guertin
Office: CLASS 102
Email: uxg3@psu.edu

Office phone: (610) 892-1427
Web site: <http://cms.psu.edu/> (ANGEL)

Office hours: 2:30PM–5:30PM Mondays (office) and Wednesdays (office/library)
Lecture: 11:30AM – 12:20PM Monday/Wednesday/Friday in CLASS 101

Textbooks: *Conservation and Biodiversity*, by Dobson (Scientific American, 1st edition, 1998), *The New York Times Book of Fossils and Evolution*, by Wade (The Lyons Press, 2nd edition, 2001), plus supplemental readings available in ANGEL each week

What's in store for you... For the majority of you enrolled in GEOSC 021, this is your first true introduction to the history of the Earth! There are no prerequisites for this course, all you need is an open mind, and you will learn things about the physical and biological history of the Earth you never knew before. Stay tuned, and find out why our planet is referred to as the "Blue Planet!" You will gain insight into the formation of fossils. Learn about plate tectonics and how the plates have moved through time. Get the scoop on ancient marine life, dinosaurs and woolly mammoths. We'll examine originations and extinctions, and focus on current issues in biodiversity and conservation. You'll even have the opportunity to work with a service project titled "Absolutely Incredible Kid Day!" where we'll examine endangered and extinct species!



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.

- **The scientific method/critical thinking/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 Palm Pilot handheld computers 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. There will be a service project required for you to share your new biodiversity and Earth history knowledge. This semester we will be targeting...



Details to follow later in semester!

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. I encourage everyone to ask questions and work with your fellow students in lecture.

- **Class Participation**

Class participation is required! This course is to be an interactive course, filled with questions, discussions, stories on your favorite Earth history 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 the lecture and lab 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 lab or a quiz 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 ASAP to find out what 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.

- **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 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 Earth 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 phones off before lecture/lab begins. If your cell phone goes off during my lecture, I will dismiss you from the rest of class.

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 and email**

ANGEL will be used much in this course. If you are not familiar 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 Excel files that I post, enter data, and then place the Excel files 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. 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 believe me when I say that I have never had a student pass my course that has not used ANGEL and/or their Penn State email address – not because I have intentionally failed them, but they did not take advantage of these technological tools and missed out on critical course materials. I'm not trying to scare anyone, but I am

serious about this. ANGEL and email will put the power and control of your learning in your hands

- **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.

- **Palm Pilots**

You will be given Palm Pilot handheld computers to use during most lecture and laboratory sessions. You will be assigned a specific Palm Pilot that you will pick up from me at the beginning of lecture/lab and return at the end of class. Training will be given on how to use the Palms during the second week of class. Please treat these Palms with respect – do not change any formats, move or delete files, etc. If I find that you have intentionally changed anything on a Palm, you will **IMMEDIATELY** lose the right to use a Palm the remainder of the semester. (***) Keep in mind that most of your labs and the field project will be on the Palms... you lose your Palm privileges, you will forfeit the right to participate in all remaining labs and complete any other assignments/projects with them!)

- **Late Assignments**

All assignments must be turned in **on time** – otherwise, 10 points will be deducted from the assignment grade for being late and every day it is late. For example, if an assignment is due 10:30AM on Monday, if it is handed in on Monday but after 10:30AM, 10 points will be taken off, then an additional 10 points if it is handed in on Tuesday, etc. 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, etc.).

- **Final Exam**

Yes, we will have an open note, open book cumulative final for this course. The final will not be your traditional multiple choice exam. The questions will be broader in scope and your responses will be in essay form. You will receive sample exam questions the last day of classes. The final is not optional. If you do not show up for the final, you will receive a grade of zero for the exam. It is your responsibility to remember the day and time of the final (listed in this syllabus).

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 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 for a lab or to 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).

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 semester 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 quizzes, out-of-class exercises, a community service project, and the final exam. The breakdown is as follows:

Mars Project – 15%

Dino-Bird Link Project – 15%

Mammoths and Men Project – 15%

Service Project (AIKD) –endangered/extinct species – 15%

Misc. Quizzes – 20% (plagiarism and syllabus, two others)

GeoBytes – 10% (see end of syllabus for explanation)

Final Exam – 10%

The final grades will be assessed at the end of the semester 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 or curve any grades during or at the end of the semester. Extra credit is NOT available in this course.***

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 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 to failing the course, depending on the severity of the violation. We will be reviewing academic integrity and plagiarism the first week of the semester, and you will have a quiz on academic integrity and plagiarism the second week of the semester.

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 lecture. Readings will also be placed in ANGEL – it is your responsibility to check the folders in ANGEL corresponding to each week for the readings (if applicable).

C&B = *Conservation and Biodiversity* text

NYT = *The New York Times Book of Fossils and Evolution* text

Week 1 (see ANGEL for readings and supplemental links)

M, 01/12: Introduction to biodiversity and Earth history (C&B p. 1-31, NYT p. 1-3)

W, 01/14: Plate tectonics (supplemental information in ANGEL)

F, 01/16: Dr. G at a meeting, plagiarism lecture (links in ANGEL to websites, complete Part I of Plagiarism quiz, place in dropbox no later than 11:30AM Monday 01/19)

Week 2 (see ANGEL for readings and supplemental links)

M, 01/19: Palm Pilot training, **QUIZ**: plagiarism (Part I of quiz should be in ANGEL dropbox by 11:30AM)

W, 01/21: Origin of universe/solar system, **QUIZ**: syllabus; **ASSIGN**: Life on Mars Project

F, 01/23: GEOBYTE: geology of the Moon and Mars

Week 3 (see ANGEL for readings and supplemental links)

M, 01/26: Life on Mars(?)

W, 01/28: Life on Mars(?)

F, 01/30: GEOBYTE: geologic time ***bring calculator to class

Week 4

M, 02/02: evolution of Earth (NYT p. 11-16, 20-24, 246-250)

W, 02/04: classification of life, **DUE**: Life on Mars Project;

F, 02/06: Dr. G at a meeting, see ANGEL for lecture material on endangered species (C&B Ch. 4 and p. 87-109)

Week 5

M, 02/09: Darwin, **QUIZ**: endangered species (see Week 4 folder in ANGEL for details)

W, 02/11: Darwin

F, 02/13: GEOBYTE: Darwin's garden

Week 6

M, 02/16: cladistics, **ASSIGN**: Absolutely Incredible Kid Day! Project

W, 02/18: fossils and fossilization (NYT p. 51-53, 154-157)

F, 02/20: GEOBYTE: ethics of fossil collecting (NYT p. 160-165)

Week 7

M, 02/23: early life (NYT p. 8-10, 17-19, 25-28)

W, 02/25: early life (NYT p. 95-107)

F, 02/27: GEOBYTE: Cambrian explosion

Week 8

M, 03/01: marine life (NYT p. 143-148)

W, 03/03: fish to reptiles (NYT p. 111-116, 131-136)

F, 03/05: GEOBYTE: Loch Ness monster

M, 03/08: SPRING BREAK – go to the beach!
W, 03/10: SPRING BREAK – go in the ocean!
F, 03/12: SPRING BREAK – build a sand castle!

Week 9

M, 03/15: dinosaurs (NYT p. 33-47, 54-57), **DUE**: Absolutely Incredible Kid Day! Project
W, 03/17: dinosaurs
R, 03/18: No class, but don't forget... today is *Absolutely Incredible Kid Day!*



F, 03/19: GEOBYTE: dinosaur DNA (NYT p. 48-50)

Week 10

M, 03/22: dino-bird link (NYT p. 58-70), **ASSIGN**: Dino-Bird Link Project
W, 03/24: Dr. G at meeting (lecture on unique dinosaur finds– see ANGEL, read NYT p. 149-153)
F, 03/26: Dr. G at meeting (lecture on dinosaur extinction – see ANGEL, read NYT p. 86-92)

Week 11

M, 03/29: dinos at the movies, **QUIZ**: dino finds and extinctions
W, 03/31: Ice Ages (NYT p. 166-168)
F, 04/02: GEOBYTE: La Brea Tar Pits

Week 12

M, 04/05: hominid evolution (NYT p. 182-223, 251-253)
W, 04/07: hominid evolution, **DUE**: Dino-Bird Link Project
F, 04/09: GEOBYTE: Neanderthals and modern humans (NYT p. 224-238, 254-258)

Week 13

M, 04/12: of mammoths and men, **ASSIGN**: Mammoths and Men Project
W, 04/14: of mammoths and men
F, 04/16: GEOBYTE: extinctions – The Big 5 and then some (C&B Ch. 3, p. 59-85; NYT p. 73-85)

Week 14

M, 04/19: Biosphere II
W, 04/21: biodiversity versus human cultures (C&B Ch. 5, p. 111-135)
F, 04/23: GEOBYTE: threats to biodiversity (C&B Ch. 9, p. 211-229)

Week 15

M, 04/26: ecotourism (C&B p. 208-209, 246-249), **DUE**: Mammoths and Men Project
W, 04/28: ethics of zoos and breeding programs (C&B Ch. 6, p. 137-161)
F, 04/30: GEOBYTE: overview of semester

FINAL EXAM (cumulative, open note, open book) will be
Monday, May 3rd 10:30AM - 12:20PM

Virtual Lectures

I will be missing some lectures this semester while I attend professional meetings. Instead of giving you “busy work” to do in my absence, I have recorded lectures for you to watch that would fill a typical class period. So instead of coming to class, watching my PowerPoint and seeing me speak, you’ll be able to watch the PowerPoint and hear me speak on the computer!

I have recorded the lectures I would have typically given during the class periods I am away. There will be a folder in ANGEL titled “Virtual Lectures” that contains a link to this online lecture and instructions on how to access. I recommend you take notes while watching this lecture just as if you were in class. There will be a quiz the next class meeting after the Virtual Lectures are assigned.

The Virtual Lectures can be watched in the following browsers:

- Internet Explorer 5.0 or later for Windows
- Internet Explorer 5.2.2 or later for Mac OS X
- Netscape Navigator 7.0 or later for Windows

Netscape Navigator will only work on the Mac if you install Windows Media Player.

There will be several ways to access these lectures (note that you will need to hear the sound for the complete lecture (speakers on home computer or use of headphones on campus)):

- **From any campus computer**, log into ANGEL, read instructions in folder and watch. For the computers in Vairo Library, the circulation desk has 3 or 4 headphones for you to use. The PC’s MUST use headphones since the speakers have been disabled. You can bring your own headphones to use with these computers (our campus bookstore also sells headphones). Both library PC computer labs (near the circulation desk and back by Room 201E) support audio w/headphones. Both Internet Explorer and Netscape 7.1 can be used with the lecture. If you want to use a Macintosh computer, you need to use Internet Explorer ONLY (Netscape will NOT work). The Macs in 201E Vairo Library support headphones.
- **From any home computer with a DSL (fast connection)**, log into ANGEL, read instructions in folder and watch and take notes.
- **If you have dial-up from home (slow connection)**, the Virtual Lecture *may* take much too long to load. I suggest trying from home to see if the lecture loads in a reasonable amount of time. BUT, if you cannot access the lecture from

home, then you are encouraged to use one of the campus computers, or sign out a CD on reserve in the library with the lecture (but there are extremely few copies on reserve).

- **If you do not have internet connectivity from home**, you'll need to either sign out a CD on reserve in the library with the lecture (but there are extremely few copies on reserve), or watch the lecture on a campus computer.

Note that you **MUST** view the lecture. Here I've presented several options for watching the lecture - there will be no excuses or reasons for not accessing the lecture before our next class meeting. **YOU ARE STRONGLY ENCOURAGED TO USE OUR SCHEDULED CLASS MEETING TIME TO ACCESS THE LECTURE ON A CAMPUS COMPUTER.** Remember that you can start-and-stop the lectures at any point – you do not need to sit down and watch the entire lecture at once. You can also go back to specific slides and review the information presented.

Explanation of the GeoBytes

A “GeoByte” is an activity where we explore some specialized topics relating to biodiversity and Earth history. Here's how the GeoBytes will work.

Readings and responses outside of class

On the weeks of our GeoBytes, you will be responsible for completing a class reading(s) from your text or an online article **BEFORE COMING TO CLASS**. On Sunday at 8AM prior to each GeoByte day, a folder will become active for that week in ANGEL with the GeoByte information (for example, the first GeoByte is Friday of Week 2, so the Sunday before we begin Week 2 a “GeoByte” folder will appear in the “Week 2” folder). In addition to the reading(s), you will be answering five short questions relating to the content of the readings and/or your point-of-view on the material. There will be link in ANGEL to that online form.

The folder will become active 8AM Sunday, and the GeoByte folder will become inactive (will disappear) on 8AM the Friday of the GeoByte. You must complete the answers to the questions before 8AM Friday to receive credit.

Class discussion on responses

We will review the class responses as a group. The responses will be presented as anonymous to the class, so no one will be able to identify “who-said-what.” We will breakout into smaller discussion groups and have further questions/statements for debate.

Dr. G's 2¢ worth

For the last 5-10 minutes of class, I'll put in my 2¢ worth on the topic of discussion. We'll also highlight some of the more “animated” discussions and develop a take-home message of the day.

How the “grading” will work

This is based on participation. Your GeoByte grade for the semester starts at 40% (40 points out of 100), and your grade moves up from there depending on your participation. We will have 12 GeoByte discussion days. Each GeoByte day is worth 5 points. Of the 5 points, 3 are for answering the questions via the web ahead of time, 2 are for your participation in the breakout discussions during the Friday class. When you answer the questions online, I will not be looking for the accuracy of your responses but your effort. For example, if for a question you respond “don’t know” or in very short and simple terms, you will not receive credit. If you fully answer the questions before class and participate in the in-class discussions, you have the ability to raise this part of your grade to 100% (100 points out of 100). If you miss a GeoByte day, you cannot receive credit for the discussion. You also cannot receive credit for not getting your online responses in on-time. There are no make-ups and no excuses allowed for missing the GeoByte online deadline or discussion - you will not receive the points for that portion of the GeoByte grade.