GEOS 104 – Catastrophes and Extinctions  
Spring 2009  
T TH 3:30 – 4:50 Pasteur 337

Professor: Dr. W. L. Beatty  
Office: Pasteur 122  
Phone: 507-474-5789  
Email: wbeatty@winona.edu

Be sure you have and regularly check a Winona State University email account. Occasionally I will use this for class announcements. Not checking your WSU email is not an excuse for missing an announcement. Also be sure to check the course website on D2L regularly.

Office Hours  
MT 1:00 – 3:00, and by appointment. You can also email with any questions you may have outside of class.

Course Catalog Description  
104 - Catastrophes and Extinctions (3 S.H.) Over 99% of the animal species that once inhabited the Earth are now extinct. Remarkably, most of these extinctions have been associated through time with significant geologic events that are considered by many to be catastrophic. In this course, students will explore the major extinctions that have taken place through geologic history. These include the extinction of numerous marine invertebrate species, the extinction of the dinosaurs 65 million years ago, the extinction of large mammals during the last ice age, and many others.

University Studies Outcomes  
This course qualifies as a University Studies course satisfying the outcomes of the Natural Science Category. If you successfully complete the course requirements, you will earn 3 credits toward completion of the Natural Science category.

This course DOES NOT satisfy the laboratory requirement of the USP Natural Science category.

The purpose of the Natural Science requirement in the University Studies program is to provide students with the tools to understand and be able to apply the methods by which scientific inquiry increases our understanding of the natural world.

These courses must include requirements and learning activities that promote students’ abilities to...  
  a. understand how scientists approach and solve problems in the natural sciences;  
  b. apply those methods to solve problems that arise in the natural sciences;  
  c. use inductive reasoning, mathematics, or statistics to solve problems in natural science;  
  d. engage in independent and collaborative learning;  
  e. identify, find, and use the tools of information science as it relates to natural science;  
  f. critically evaluate both source and content of scientific information; and  
  g. recognize and correct scientific misconceptions.

These outcomes will be integrated throughout course content—each new topic will be presented in a manner in which the student will be able to understand and apply the methods by which scientists approach and solve problems in the natural sciences, using inductive reasoning or mathematics (outcomes a-c). Common scientific misconceptions will be identified during each topic, and class material will be directed toward correcting those misconceptions (outcome g). You will be asked to work collaboratively on in-class activities and independently on homework and exams (outcomes b-d). In-class and homework assignments will require that you work with several forms of media (video, the internet, textbook CD-ROM’s) and other sources to critically evaluate scientific information (outcomes e, f). During class meetings, you will have the opportunity to engage in scientific investigation of geologic phenomena operating on Earth as they relate to extinctions and catastrophic events.
This course is designed to stimulate and challenge your thinking (outcomes a, b, c, f, g). There are no prerequisites for this course, and if you can balance your checkbook, you are prepared to do the math that will be required (outcome c). During exams, I will expect you to understand and apply fundamental concepts (outcomes a, b, c, e, f, g), rather than simply memorize information. You should strive to achieve as complete and sound a scientific interpretation as possible by trying to integrate information across different topics we have covered together.

Course Outline and Information
We will cover topics in this general order:

The Basics
Rocks
Principles of Stratigraphy – Relative Ages
Isotopic Dating – Absolute Ages
The Geologic Time Scale
Plate Tectonics

Precambrian Catastrophes Part 1
Planetary Collisions – Forming the Earth & Moon

Life on Earth Part 1
The Tree of Life
Fossils & Fossilization
The Earliest Fossils

Precambrian Catastrophes Part 2
The Poisoning of the Atmosphere
Snowball Earth

Life on Earth Part 2
Ediacaran Life & The Cambrian Explosion
Major Groups in the Fossil Record

Extinction
Evidence for Extinctions in the Fossil Record
Mass Extinctions

The Causes of Mass Extinctions
Impacts
Volcanism
Sea Level Changes
Oxygen Deficiencies
Climate Change
Human Influences

Understanding Mass Extinctions

Although there is no required textbook for this course, readings will frequently be posted on D2L. I will keep you informed of these postings.

Exams and Quizzes
There will be three exams during the semester consisting entirely of multiple-choice questions. A final exam will be given during the final examination period. Although the final will be comprehensive, it will emphasize material covered during the last portion of the class. Bring a scantron answer sheet (Form 882-E), pencil and eraser to each exam. Quizzes may either be online (“warm-ups” announced ahead of time) or in-class (unannounced).

Homework and In-class Assignments
Small homework and in-class assignments may be given throughout the term to help reinforce concepts learned in class.

In-class assignments are due at the end of class and homework assignments are due at the beginning of the class on the assigned due date.

No late work will be accepted. If you are not present for an in-class activity, you will not be able to make it up.
Grading
Exam 1 (T 2/3) 15%
Exam 2 (T 2/24) 15%
Exam 3 (TH 4/9) 15%
Final Exam (T 5/5, 3:30 – 5:30 pm) 20%
Assignments, Quizzes, etc. 35%

General grade breakdown:
A = 90 – 100%
B = 80 – 89%
C = 70 – 79%
D = 60 – 69%
F = < 60%

Course Policies

Attendance
You are required to attend all lectures and exams. If you choose to not attend, you will not be able to make up any homework, in-class assignment, exam or quiz handed out or given during that time. Excused absences from exams will only be granted in the case of extreme illness, family emergency, participating in a mandatory class field trip or representing WSU at cultural and athletic events. Documentation supporting absences for these reasons will be required. Makeup will be entirely short answer/essay. If you miss an exam or a class in which an in-class assignment was completed or homework was handed out without contacting me ahead of time, you will not be given the opportunity to make up the work and you will earn a zero for that activity or exam.

This course will benefit greatly from student participation. As such, an environment of tolerance, acceptance, courtesy, and open-mindedness is absolutely required.

Academic Honesty
Academic honesty, the cornerstone of teaching and learning, lays the foundation for lifelong integrity. Academic dishonesty is, in most cases, intellectual theft. It includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for evaluation. This standard applies to all work ranging from daily homework assignments to major exams. Students must clearly cite any sources consulted—not only for quoted phrases but also for ideas and information that are not common knowledge. Neither ignorance nor carelessness is an acceptable defense in cases of plagiarism. It is the student’s responsibility to follow the appropriate format for citations.

There is no room for academic dishonesty in a scholarly environment. Any cheating will result in failure of the course. Also, it will be reported to the appropriate campus authorities. I have zero tolerance for anyone who cheats.

For further information, see the Academic Integrity Policy and Due Process Rights of the WSU Student Conduct Policy:
http://www.winona.edu/studentaffairs/conduct.htm

Examples of Academic Integrity Violations:

Cheating: Using or attempting to use unauthorized materials in any academic exercise or having someone else do work for you. Examples of cheating include looking at another student’s paper during a test, bringing a “crib sheet” to a test, obtaining a copy of a test prior to the test date, or submitting homework borrowed from another student.
Deception and Misrepresentation: Lying about or misrepresenting your work, academic records, or credentials. Examples of deception and misrepresentation include forging signatures, falsifying application credentials, and misrepresenting group participation.

Enabling Academic Dishonesty: Helping someone else to commit an act of academic dishonesty. This would include giving someone else an academic assignment with the intent of allowing that person to copy it or allowing someone else to cheat from your test paper.

Fabrication: Refers to inventing or falsifying information. Examples of fabrication include “dry-labbing” (inventing data for an experiment you did not do or did not do correctly) or making references to sources you did not use in academic assignments.

Multiple Submission: Submitting work you have done in previous classes as if it were new and original work. Although faculty may be willing to let you use previous work as the basis of new work, they expect you to do new work for the class. Students seeking to submit a piece of work to more than one class should seek the permission of both instructors.

Plagiarism: Using the words or ideas of another writer without proper acknowledgment, so that they seem as if they are your own. Plagiarism includes behavior such as copying someone else’s work word for word, rewriting someone else’s work with only minor word changes, and/or summarizing someone else’s work without acknowledging the source.

Distracted Learning Policy
These days technology is ubiquitous. However, the inappropriate use of technology can be extremely distracting in a classroom setting. The extent of the distraction is usually not limited to the person using the technology but also affects others around that person. In this spirit, I explicitly prohibit the inappropriate use of anything during class-related activities that distracts the user or other class participants (including the instructor) from learning. This policy broadly includes, but is not limited to, e-mail, instant messages, texts, cell phones, laptops, iPods, PDAs, and other similar devices. Inappropriate behavior will be defined by the instructor, and will include anything that causes distraction in our learning environment.

Penalties for violating this policy will be determined by the instructor on a case-by-case basis. They may range from (1) simply requesting that the distracting activity be ceased to (2) dismissal from that particular class meeting to (3) failure of the course, for repeat offenses, or (4) other punishments deemed appropriate by the instructor.

This policy is intended to protect the integrity of the learning environment and the right of each student and instructor to learn.

From time to time, we may be working on in-class activities that require you to use your laptops. I will notify you in advance if we will be using laptops during class.

Some students may also want to use their laptops for note-taking. Using laptops to take notes is permitted if the student

- obtains prior approval from the instructor
- sits in the designated “laptop use” area (a portion of the front row) during class

Professionalism and Respect
Once you receive your degree and commence your career beyond college, you will be expected to adhere to the basic etiquette and customs of our society. In addition to teaching course content, it is incumbent upon us as faculty to also prepare you to succeed in your professional careers. Practically every career requires you to interact with colleagues, supervisors, clients, or the public, and it is important to understand how to present
yourself in a professional and competent manner.

In this light, I will hold you to these same standards. The student-faculty relationship falls within the realm of the professional—after all, we are professionals and you are attending this university to become professionals.

It is impossible to cover every possible way that someone could breach these standards, but below are a few initial guidelines that will hopefully encourage an on-going discussion about the best approach to various etiquette and ethical issues.

- Defer to formal titles (Dr., Mr., Ms., etc.) until explicitly invited to use the familiar. This is particularly true when engaging in professional interactions with strangers, superiors, or persons in positions of respect. Also, understand that not all relationships are symmetrical—meaning that it is generally appropriate for a professor to refer to a student by their first name, but it is usually expected that professors will be afforded the respect of a formal title.

- When communicating by any means, be aware of the context of the exchange. If you are texting your friend it is probably OK to skip formalities and abbreviate words. If you are communicating in a professional context, it is important to defer to the formal. This includes using appropriate titles, being clear and concise, and interacting respectfully. This is never more important than in written communication. The written word lacks the nuances and context of verbal inflections, cues, and body language. Thus, the exact same spoken sentence that may be perfectly clear in a face-to-face conversation may be ambiguous or taken the wrong way when written in an e-mail or letter. This is why we have very specific rules of grammar and syntax. Those rules provide a common basis for interpreting written communication.

- Respect others. When you are requesting something from someone, you must be clear and concise. For instance, if you send someone an e-mail and they have to reply for clarification regarding your request, you have disrespected them by wasting their time. Similarly, if you begin a message with “Hey” or defer to an informal greeting inappropriately, you have begun the interaction by being disrespectful. Consider the response you will get if someone sees your inquiry as disrespectful.

- Constantly work to improve your skills at communication. There is no room for poor grammar, coarse language, or bad spelling in professional communication. If you take such things lightly, don’t assume that everyone else does too. An alumnus recently related stories of his firm losing a large contract because of a grammatical error (fortunately it wasn’t his error).

Accommodation
Any student who is impacted by a disability should contact me as soon as possible so that we can discuss how best to accommodate your needs.

Inclusive Excellence
Commitment to Inclusive Excellence: WSU recognizes that our individual differences can deepen our understanding of one another and the world around us, rather than divide us. In this class, people of all ethnicities, genders, religions, ages, sexual orientations, disabilities, socioeconomic backgrounds, regions, and nationalities are strongly encouraged to share their rich array of perspectives and experiences. If you feel your differences may in some way isolate you from WSU’s community or if you have a need of any specific accommodations, please speak with the instructor early in the semester about your concerns and what we can do together to help you become an active and engaged member of our class and community.

Campus Resources
- Student Support Services, Howell Hall 133, 457-5465 (www.winona.edu/studentsupportservices/)
- Inclusion and Diversity Office, Kryzsko Commons Room 122, 457-5595 (www.winona.edu/culturaldiversity/)
- Disability Resource Center, Maxwell 331, 457-2391 (www.winona.edu/disabilityservices/)
Details about Campus Resources

- Two good places to help you find resources of all kinds on campus are Student Support Services and the Inclusion and Diversity Office. Both offices are dedicated to helping students of all races, ethnicities, economic backgrounds, nationalities, and sexual orientations. They can facilitate tutoring and point you to a wide range of resources. Student Support Services is in Howell Hall 133, and they can be reached at 457-5465. The Inclusion and Diversity Office is in Kryzsko Commons Room 122, and they can be reached at 457-5595.

- If you have a disability, the Disability Resource Center (DRC) can document it for your professors and facilitate accommodation. Their office is in Maxwell Hall, 3rd floor, and they can be reached at 457-2391. If you have a documented disability that requires accommodation, please let me know as soon as possible. If you suspect you may have a disability, you are encouraged to visit the DRC as soon as possible.

- College can be very stressful. The Counseling Center is there to help you with a wide range of difficulties, ranging from sexual assault, depression, and grief after the loss of a loved one to stress management, anxiety, general adjustment to college, and many others. Their office is located in Wabasha Hall 220, and they can be reached at 457-5330.

- For help with writing and the development of papers, the English department has a Writing Center available to students and staffed by trained graduate students pursuing their Master's degree in English. The Writing Center is located in Minné Hall 348. You can make an appointment on the sign-up sheet on the door or call 457-5505.

- The GLBTA Advocate is responsible for documenting homophobic incidents on campus and working with the appropriate channels to get these incidents resolved. In addition, the advocate can direct people to GLBT resources on campus and in Winona. Contact the Counseling Center for the name and number of the current GLBTA Advocate. (Wabasha Hall 220, 457-5330)

Please note that this syllabus is subject to revision

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