Tentative Syllabus (updated 9-16-10)

Geology 230  FOSSILS & EVOLUTION, Honors Section  Fall 2010

Instructor:  Dr. Thomas W. Kammer

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Office Hours:  2:30-5:00 p.m., Monday and Wednesday; other hours by appointment; check both office and lab.  You are encouraged to come and see me whenever you feel the need to discuss course issues.  It's always a good idea to make an appointment, even for times during the scheduled office hours, as I sometimes have to step out of my office or lab to attend to university chores.

Class Time:  Monday, Wednesday, Friday, 1:30-2:20, Room 305 Brooks.

Prerequisites:  either GEOL 101/110 or BIOL 101

Texts:  Prehistoric Life by DK, 2009; The Tangled Bank by Zimmer, 2010

Grades:  Evaluation of your performance will be based on tests, pop quizzes, and writing assignments.  The four tests will be based on the reading assignments and lecture materials and presentation; none comprehensive.  Ten short pop quizzes will be based on assigned readings, class discussions, and lab specimens, so it is important to attend each class and keep up with the readings.  The two short writing assignments will involve presentation and analysis of topics relevant to the course.

Tests (4):  short answer, short essay, fill-in-the-blank, matching  60%  (15% each)
Pop Quizzes and Exercises (10):  multiple choice, short answer, fill-in-the-blank  20%  (2% each)
Writing Assignments (2):  details TBD  20%  100%

Grades will be based on the following scale unless the class average falls below 75, in which case there will be a curve such that the class average is at least a middle C.

A  90-100%  B  80-89%  C  70-79%  D  60-69%  F  < 60%

Attendance:  Regular attendance is strongly encouraged, but not required.  However, quiz dates will not be announced and you must be present in order to take the quiz.  Makeup quizzes will not be offered (see Extra Credit, below).

Late work:  If you have an acceptable excuse, late written work will be accepted by a mutually agreeable date.  Otherwise your grade will be lowered 5% a day for each day it is late.  Make up tests will be provided only for acceptable excuses, preferably approved in advance of the original test date.
Field Trips: **Extra Credit (5% total).** Dates to be determined by group input. We will take an afternoon trip in September or October to collect fossils near Morgantown (2%). We will also take an all day trip on Friday, November 12, to the Carnegie Museum of Natural History in Pittsburgh to view their fossil exhibits and collections (3%). We can get to the research collections on a Friday, but not a Saturday.

Writing Assignments: One writing assignment will be based on separate readings from the lecture texts that I hope you find provocative and interesting. A set of specific instructions, and questions to be addressed, are given at the end of this syllabus.

The second writing assignment will be based on our trip to the Carnegie Museum of Natural History in November. During this trip we will have the opportunity to see several modern paleontological exhibits on vertebrate fossils. With instructor approval, each student should choose to do further study on the fossil taxa in a particular exhibit they find interesting. A set of specific instructions, and questions to be addressed, will be provided to guide the writer. (If you miss the trip, you will be assigned taxa to research.)

The writer may be asked to find additional information from published research sources using GEOREF and Electronic Journals on the WVU Library web site, and other approved resources on the Web. Do not be tempted to copy any text (illustrations OK) from the Web or other resources, or the paper may end up with a big goose egg.

Educational Goals:

1. **This course satisfies GEC Objective 2 in the area of Scientific Inquiry.**
2. How do we know the history of life on earth? What kinds of data do paleontologists collect and analyze?
3. What is the role of fossil data in understanding the processes of evolution?
4. What processes are involved in evolution through natural selection?
5. How does human evolution fit into the scheme of life’s history on earth?
6. How does culture influence our interpretation of science and scientific data?
7. How do scientists do science? How objective is the process? How valid are the results? How do we develop critical thinking skills about evolution and science in general?
8. Why should the history of life matter in our modern, digitally-oriented society?

**SOCIAL JUSTICE STATEMENT**

West Virginia University is committed to social justice. I concur with that commitment and expect to foster a nurturing learning environment based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color, or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with Disability Services (293-6700).

**West Virginia University**

**Academic Integrity Statement**

The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all tests, quizzes, and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code at www.arc.wvu.edu/rights.html. Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me before the assignment is due to discuss the matter.
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<thead>
<tr>
<th>Week of</th>
<th>Topic</th>
<th>Assigned Readings</th>
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<tbody>
<tr>
<td>Aug. 23</td>
<td>Introduction to the Study of Evolution</td>
<td>DK 26-29; Zimmer, Ch. 1, 2</td>
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<td>Aug. 30</td>
<td>Relative and Absolute Geologic Time – Reading Rocks and Telling Time Lab: Sedimentary Rocks</td>
<td>DK 44-45; DK 12-13; Zimmer, Ch. 3</td>
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<td>Sept. 6</td>
<td>Reading Rocks and Telling Time (cont’d) Lab: Preservation of Fossils Exercise: Calculating radiometric dates</td>
<td>DK 12-13; Zimmer, Ch. 3; DK 34-43</td>
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<td>Sept. 13</td>
<td>Organization of Life and Phylogeny Lab: How to draw an evolutionary tree</td>
<td>DK 30-31; Zimmer, Ch. 4</td>
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**TEST 1, MONDAY, SEPTEMBER 20**

| Sept. 20 | Beginning of Life on Earth Lab: Precambrian rocks and fossils | DK 51-63 |
| Sept. 27 | Natural Selection and Evolution (Darwinism) | Zimmer, Chs. 6, 8 |
| Oct. 4 | The Origin of Phyla and the Cambrian Explosion of Life Lab: Review of Fossil Invertebrate Phyla | Zimmer, Ch. 10; DK 65-79 |
| Oct. 11 | Contingency in Evolution: Extinctions Lab: Fossil collecting | Zimmer, Ch. 10 |

**TEST 2, MONDAY, OCTOBER 18**

| Oct. 18 | Vertebrate Origins: Fish and Amphibians | Zimmer, 59-61, 64-68; DK 92-93, 106-107, 128-139, 162-169 |

**Writing Assignment #1 due, Monday, Oct. 25**

| Nov. 1 | No class Oct. 29 and Nov. 1, 3: GSA Annual Meeting in Denver |
| Nov. 8 | Primitive Mammals Lab: Friday, Nov. 12, trip to Carnegie Museum of Natural History | Zimmer, 68-71; DK 279, 356-357, 374, 380-385 |

**TEST 3, WEDNESDAY, NOVEMBER 17**

| Nov. 15 | Advanced Mammals | DK 404-413, 430-439 |
| Nov. 22 | Thanksgiving Recess |
| Nov. 29 | Hominid Evolution Lab: Hominid skulls | DK 440-473; Zimmer, 75-83; Writing Assignment #2 due, Friday, Dec. 3 |
TEST 4, THURSDAY, DECEMBER 16, 3:00 PM
GUIDELINES FOR WRITING ASSIGNMENTS

1. Include a title page, presenting the title of your paper, your name, date, and the course. Begin the text with an introduction (generally one paragraph) that introduces the main topic of your paper to the reader, but don’t just restate the instructions for the assignment. End with a conclusion that summarizes your major points. References cited should be in standard scientific format found in your textbook or in science papers. When citing a reference in your paper use these formats: “Smith (1995, p. 76) reported...” or “... theropod dinosaurs were carnivores (Jones, 2002, p. 54).”

2. Text is to be typed, spell-checked, and proof-read. Use one inch borders all around the page and 12-point type. Use an easy to read font, such as Times New Roman or Arial. Double space the text and number the pages. Following this format, the text should be approximately 250-300 words per page. Each paper should be targeted for five pages of text, not including title page, references, and any figures.

3. Late papers are docked 5% per day (see Late Work Policy, page 1). Think of this like submitting a report to your boss someday.

4. Do your own work. Do not copy, do not plagiarize. Learn to paraphrase when reporting previously published information. Direct quotes can be used sparingly and should be placed in quotation marks and correctly referenced.

GEOLOGY 230: CRITERIA FOR EVALUATING WRITING ASSIGNMENTS

GRADE OF A: This is an outstanding essay that reflects a perceptive and thoughtful response to the assignment. It is well organized with an excellent development of the ideas and reflects the writer's command of an appropriate writing style that shows effective communication or persuasion. The prose is vigorous and fresh, and the writer is clearly in control of the standard conventions of American prose.

GRADE OF B: This is a very good essay that fulfills the assignment and shows evidence of clear thought and good planning. It is well organized with good supporting details. The writing is fluent, and there are only minor errors in the mechanics of writing which do not interfere with reading the essay.

GRADE OF C: This is a satisfactory essay which fulfills the assignment and is adequately developed. The writing is clear and coherent with relatively few errors in usage and mechanics (syntax and grammar), but the writer fails to demonstrate any particular strength which would distinguish an above-average essay.

GRADE OF D: This is a below-average essay which fulfills the assignment but exhibits major problems in writing. Or it may address the assignment poorly, at best. It may have difficulty with the presentation of ideas (e.g., lack of a clear thesis, weak organization, poor development of ideas, awkward style, or inappropriate diction), poor use of idiom (appropriate language and terms for the topic), or be marred by enough errors in the mechanics of writing (syntax and grammar) to seriously distract the reader.

GRADE OF F: This is an essay that relates to the topic but is so poorly presented that it fails to fulfill the assignment. It fails to present its basic ideas, either because of poor organization and lack of clarity or because the writing reflects a lack of control over the basic conventions of standard American usage. Such as essay may have sentence problems, poor use of idiom (appropriate language and terms for the topic), inappropriate diction, agreement errors, or verb-tense problems.
Readings for Writing Assignment #1: Listed are some source for ideas. This list is not exhaustive and if you have suggestions for other books, please let me know. Gain access to the following books either through the library (please share with others if they ask), by purchase, or by borrowing from the instructor (last resort).

Choose a couple of chapters from a book to build an essay around. Discuss with course instructor before starting the assignment. Agree or disagree with the ideas of the authors by presenting their thesis and evaluating it. Do not just rehash what the author presents, rather present your own analysis agreeing or disagreeing, all or in part, with the ideas of the author. Explain why you agree or disagree.


