

Biology 310 - History of Life Course Syllabus

I. Personal Information

Instructor: Dr. Dale D. Edwards

Office: KC 214

Phone: 488-2645

e-mail: de3@evansville.edu; homepage: <http://faculty.evansville.edu/de3/>

Office Hours: MWF, 10:00 - 11:00 a.m., Thursday, 3:00 - 4:30 p.m., and by appointment

II. Course Information

A. Meeting Time and Place: 9:30 – 10:45 a.m., TTh, KC 131

B. Reading Materials: There is no assigned textbook for this course. I have, however, provided you with a list of web sites (see course syllabus) that will serve as supplemental reading materials for various topics covered during the course of the semester. There are two supplemental readers for this course: 1) Conway-Morris, S. 1998. *The Crucible of Creation: The Burgess Shale and the Rise of Animals*. Oxford University Press; and 2) Raup, D. 1992. *Extinction: Bad Genes or Bad Luck?* W. W. Norton & Company. There are also a number of articles and essays that you will be required to read during the course of the semester (see lecture syllabus).

C. Bio 310 Web site address: <http://faculty.evansville.edu/de3/b39903/>

D. Course Description: This course will attempt to survey the major events in the history of life, from the origin of life some four billion years ago to the extinction and speciation episodes that have resulted in the variety of organisms that have come to occupy the planet in more recent geologic time. Although I have not assigned a textbook for the course, I have supplemented most lecture topics with related reading materials from a variety of web sites.

III. Evaluation

Your final grade will be determined using the following formula:

Exam 1 - 20%

Exam 2 - 20%

Final Exam - 20% (or 10% with 10% reallocated to quizzes)

Review Article - 20%

Article/essay quizzes - 10%

Quiz over *Crucible of Creation* - 5%

Quiz over *Extinction* - 5%

The grading scale for this course is as follows:

93 - 100 = A, 90 - 92 = A- , 87 - 89 = B+, 83 - 86 = B, 80 - 82 = B-, 77 - 79 = C+,
73 - 76 = C, 70 - 72 = C-, 67 - 69 = D+, 63 - 66 = D, 60 - 62 = D-, >60 = F

IV. Assignments

Supplemental Books: You are required to read two books for the course: 1) *Crucible of Creation* by S. Conway-Morris and 2) *Extinction: Bad Genes or Bad Luck?* by D. Raup. You will be given a quiz over the material in *Crucible of Creation* on Thursday, February 8th. We will discuss this book in class on that same Thursday, and possibly during lectures the following week. You will be given a quiz over Raup's book on Tuesday, March 13th. We will discuss the material presented in *Extinction* for the remainder of the class period.

Assigned Articles: There are five articles that you will be required to read throughout the course of the semester (see lecture syllabus for scheduled dates). These reading assignments are intended to reflect on a variety of evolutionary topics that will not be discussed in class. You are expected to have read and been prepared to discuss these materials for the assigned dates (on a Thursday of a selected week). There will be a brief quiz over each assigned reading prior to the discussion. These quizzes will represent 10% of your grade for the course. Articles will be posted on the Biology 310 course management system on Blackboard.

Topics and List of Assigned Articles:

1. Application of Darwinism: Darwin's Dangerous Idea by D. Dennett; Dennett's Dangerous Idea by A. Orr.
2. Evolution of Complexity: Human Chauvinism by R. Dawkins; Self-Help for a Hedgehog Stuck on a Molehill by S. Gould.
3. Natural selection as an optimizing agent: The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Program by S. J. Gould and R. Lewontin; The Spaniels of St. Marx and the Panglossian Paradox by D. C. Queller.
4. On punctuated equilibrium: Opus 200 by S.J. Gould; Punctuated Equilibria—Where is the Evidence? by P. D. Gingerich
5. Application of the extended phenotype: Universal parasitism and the co-evolution of extended phenotypes by R. Dawkins.

Review Article Assignment: In partial fulfillment of this course, you are required to write a review article that addresses some aspect of the history of life through time. You are expected to have selected and discussed a review article topic by March 2nd. The article must have a title page that includes the title of the article, your name, the name of the

course and the instructor for the course. You must have a least eight references and five of them must be sources (e.g., journal articles, books, essays, etc.) other than internet web sites. Your citations *must* be presented in exactly the same style that is used for articles published in the journal *BioScience*. If you fail to adopt this style, your performance on the paper will be lowered by a letter grade. Your review articles should be approximately five typewritten, double-spaced pages in length. They are due in class on **Thursday, April 19th**.

I have posted examples of review articles from *BioScience* on UE's Blackboard in an effort to give you a better idea of general style and content that is expected of your review article.

Field Trip: I have scheduled a trip for Saturday November 14th. We will travel to the Crawford County, Indiana (just N of I-64 HW 37) and collect fossils in several exposed outcrops just off the highway. We will plan on leaving the University around 9:00 a.m. and should return to UE around 2-3:00 p.m. Please pack a lunch for the trip and wear appropriate clothes for hiking and working outside.

V. Lecture Schedule*

<u>Week</u>	<u>Lecture Topic</u>	<u>Web Link Readings</u>
01/08	Introduction: Why study the History of Life? Discussion of Article Topic 1	Introduction to Evolutionary Biology Geologic Time Scale
01/15	How to Measure Geologic Time Discussion of Article Topic 1	Geologic Time
01/22	The Origin of Life Discussion of Article Topic 2	The Origin of Life: Abiotic Synthesis of Organic Molecules
01/29	Early Life on Planet Earth Discussion of Article Topic 3	Cyanobacteria: Fossil Record
02/05	Origin of Eukaryotes Origin of Multicellular Organisms Quiz and discussion over <i>Crucible of Creation</i> (Thursday)	Endosymbiotic Theory Multicellular Organisms
02/12	Evolution of Early Animal Life Exam 1	The Ediacarans
02/19	Evolution of Early Animal Life Discussion of Article Topic 4	The Cambrian Explosion
02/26	Vertebrate Origins	Dawn of Vertebrates Early Fossil Fishes
03/05	Spring Recess	
03/12	Quiz on <i>Extinction</i> book (Thursday) The Terrestrial Invasion	Mass Extinctions The Invasion of Land
03/19	A brief history of amphibians and reptiles Discussion of Article Topic 5	Life of the Carboniferous
03/26	The Beginning and the End of the Dinosaurs Exam 2	Evolution of the Dinosaurs
04/02	The Evolution of Flight	Vertebrate Flight
04/09	The Origin of Mammals Thanksgiving Recess	The Evolution of Mammals
04/16	The Evolution of Cenozoic Mammals	The Age of Mammals
04/23 04/30	Discussion of Review Articles	
05/09	Final Exam (8:00 am)	

*This lecture schedule may be modified depending on the pace of the course

VI. Attendance/Deadline Policy

Your participation in the classroom is integral to the course. You are expected to attend all classes. If you miss class during a regular lecture session you are responsible for all work missed. If I am under the impression that a noticeable number of students are not attending class on a regular basis, I will implement a policy of weekly quizzes. The quizzes will compose 10% of your grade, with 10% being reallocated from the Final Exam.

The dates indicated for the exams, readings, and assignments (see lecture syllabus) are considered final. If for some unforeseen reason you are unable to attend class on the day of a lecture exam, quiz, or assignment deadline, I will ask that you contact me immediately. Furthermore, I will request that you submit a note from the Office of the Dean of Students confirming the reason for your absence. If the reason for your absence complies with University policy governing excused absences, I will work with you on an arrangement that is appropriate for the exam or assignment that was missed. If you miss a lecture exam you will be given a re-test. If you do not satisfy the terms of this request you will regrettably receive a zero for the lecture exam missed. And in the case of an assignment that has not been turned in on the specified due date, a letter grade will be subtracted for your performance for each day that it is overdue. If you miss an exam because of an official University event, you will be granted the same privileges, provided that the event has been properly authorized.

VII. The Honor Code

In the performance of all work in this course each student is expected to adhere to the standards of ethical behavior as stated in the University of Evansville Honor Code (page 42, 2005-2007 Undergraduate Catalog). The following are expected:

1. students neither give nor receive assistance on exams
2. each report is the students own work
3. students avoid plagiarism in their written work
4. students deal forthrightly and honestly when consulting with faculty

If there is any reason to suspect that you have violated the University honor code, you will automatically receive a zero for the work in question. Your violation will be reported to the Office of the Dean of Students and will probably result in an Honor Council hearing. Any student found guilty and sanctioned by the Honor Council is entitled to an appeal.