

San José State University
Geology 107: Prehistoric Life (Section 04), Spring 2009

Instructor: Dr. Jonathan Hendricks

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Office Hours: Tuesday, 3:00-5:00PM
Wednesday, 3:00-5:00PM
Thursday, 12:00-1:00PM
Or, by appointment if you cannot make any of the above times.

Class Days/Time: Tuesdays & Thursdays, 10:30AM – 11:45AM

Classroom: 208 Duncan Hall

Prerequisites: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE/SJSU Studies Category: Area R: Earth & Environment

Course Description

Integrated interdisciplinary examination of the fossil record, including information from the fields of paleontology, genetics and cosmology that aids in the understanding of organic evolution and periodic massive extinctions.

Course Goals and Student Learning Objectives

By the end of this course, you should be able to:

- a. understand and know the major concepts, ideas, and vocabulary relevant to the study of ancient life;
- b. understand in broad terms the history and chronology of life on Earth;
- c. understand how the fossil record is scientifically studied;
- d. appreciate the impact that knowledge of the fossil record has had on evolutionary theory;
- e. demonstrate an understanding of the methods and limits of scientific investigation;
- f. distinguish science from pseudo-science; and
- g. apply a scientific approach to answer questions about the Earth and environment.

Meeting the SJSU learning objectives: Course activities and assignments address the GE Area R student learning objectives in the following ways:

In order to demonstrate an understanding of the methods and limits of scientific investigation (Learning Objective e), you will describe how the remains of ancient life can be preserved, explain how the geologic age of a fossil can be determined and evaluate the accuracy of such an age, and critically evaluate the various theories for several mass extinction events, including the extinction of the dinosaurs.

In order to distinguish science from pseudo-science (Learning Objective f), you will compare the theory of organic evolution with creationism.

In order to apply a scientific approach to answer questions about the Earth and environment (Learning Objective g), you will critically evaluate different theories concerning the origin of the Earth and the origin of life on Earth, describe changes that have occurred in life through time, and explore the evidence related to the nature and distribution of fossil humans and the significance of these fossils for understanding modern humans.

Required Textbooks

Bryson: A Short History of Nearly Everything (Broadway Books: ISBN 0-7679-0818-X). [list price \$16.95]

Prothero: Evolution—What the Fossils Say and Why it Matters (Columbia University Press: ISBN 978-0-231-13962-5. [list price \$29.50]

Lectures

PDF copies of the lecture slides and associated study guide questions will typically be posted to Blackboard by the evening before class. Feel free to print these materials and bring them with you to class (copies will not generally be provided to you in class).

It is expected that you will have read the assigned readings *prior* to attending the lecture for which they are assigned.

Classroom Protocol

All students are expected to act civilly during class time. This means: no excessive talking/whispering during lecture, no reading newspapers/magazines, no talking on cell phones or sending text messages (turn them *OFF* before class begins!!), no use of laptops for purposes other than taking notes (e.g., *NO game playing, internet surfing, checking email, or instant messaging*), etc. Please be respectful to each other. If you have to arrive late or leave early, be as quiet and considerate as possible – *DO NOT* make this a regular habit. Any activities deemed disruptive will be met with appropriate disciplinary action, including expulsion from the classroom. Students are welcome to raise their hands and ask me questions when called upon. I expect e-mails to me to be respectful and professional; I will do my best to respond to such e-mails within 24 hours.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. [Information on add/drops are available at http://info.sjsu.edu/web-dbgen/narr/soc-fall/rec-324.html](http://info.sjsu.edu/web-dbgen/narr/soc-fall/rec-324.html) . [Information about late drop is available at http://www.sjsu.edu/sac/advising/latedrops/policy/](http://www.sjsu.edu/sac/advising/latedrops/policy/) . Students should be aware of the current deadlines and penalties for adding and dropping classes.

Assignments and Grading Policy

There will be a total of 1000 points available in the course: 500 from exams (Exams 1 & 2, 150 points each; Final Exam 200 points), 200 from two written assignments (100 points each), and 300 from short quizzes/assignments (20 points each). Final grades—based upon percentages of the total points available—will be calculated using the following distribution:

99% to 100%	A+
93% to <99%	A (excellent)
90% to <93%	A-
87% to <90%	B+
83% to <87%	B (good)
80% to <83%	B-
77% to <80%	C+

73% to <77%	C (adequate)
70% to <73%	C-
67% to <70%	D+
63% to <67%	D (poor)
60% to <63%	D-
<60%	F (failure)

It is possible that a downward adjustment, to a maximum of 10 percentage points, may be made to this scale at the end of the semester if the final overall median point total for all work turned in by all students is less than 80%. In such a case, the grade scale will be shifted downward by the difference between the median score and 80%. For example, if the final median grade percent is 75%, attaining 85% of the total points will earn you an A- in the course. The grade scale will not be shifted upwards (if you earn at least 93% of the total points, you are guaranteed an A in the class).

Exams

There will be a total of three exams: two in-class midterms (March 3 and April 14) and a final exam (May 18, 9:45AM-Noon). Each exam will feature a combination of short-answer (several words to several sentences), multiple-choice, and/or true-false questions. Exams 1 and 2 (150 points each) will successively cover approximately one-third of the course material; the final exam (200 points) will focus on material covered during the last third of the course, but will also contain questions regarding material covered earlier in the course.

Writing Assignments

There will be a total of two major writing assignments (each about five double-spaced pages long), each of which will be worth 100 points. See syllabus for due dates. Details on these writing assignments will be provided later.

Quizzes

A total of 15 short quizzes will be administered throughout the course of the semester. These will consist primarily of quizzes that will be completed outside of class using the online software "Blackboard", but will also include some pop-quizzes given during lecture. Each short quiz will be worth a total of 20 points (300 points total). See the attached guidelines for logging into and using Blackboard.

Extra Credit

Besides the *possibility* of one to several extra credit questions on each of the exams, no extra credit work will be given or accepted.

Make-Ups

Except in cases of serious illness (supported by a doctor's note) or the death of a loved one, make-ups of exams, assignments, and quizzes WILL NOT be permitted.

University Policies

Academic integrity

Students should know that the University's [Academic Integrity Policy is available at http://www.sa.sjsu.edu/download/judicial_affairs/Academic_Integrity_Policy_S07-2.pdf](http://www.sa.sjsu.edu/download/judicial_affairs/Academic_Integrity_Policy_S07-2.pdf). Your own commitment to learning, as evidenced by your enrollment at San Jose State University and the University's integrity policy, require you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The website for [Student Conduct and Ethical Development is available at http://www.sa.sjsu.edu/judicial_affairs/index.html](http://www.sa.sjsu.edu/judicial_affairs/index.html).

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include in your assignment any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy F06-1 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the DRC (Disability Resource Center) to establish a record of their disability.

Student Technology Resources

Computer labs for student use are available in the Academic Success Center located on the 1st floor of Clark Hall and on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library.

Learning Assistance Resource Center

The Learning Assistance Resource Center (LARC) is located in Room 600 in the Student Services Center. It is designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. The center provides support services, such as skills assessment, individual or group

tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. [The LARC website is located at http://www.sjsu.edu/larc/](http://www.sjsu.edu/larc/).

SJSU Writing Center

The SJSU Writing Center is located in Room 126 in Clark Hall. It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Our writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers. [The Writing Center website is located at http://www.sjsu.edu/writingcenter/about/staff/](http://www.sjsu.edu/writingcenter/about/staff/).

Peer Mentor Center

The Peer Mentor Center is located on the 1st floor of Clark Hall in the Academic Success Center. The Peer Mentor Center is staffed with Peer Mentors who excel in helping students manage university life, tackling problems that range from academic challenges to interpersonal struggles. On the road to graduation, Peer Mentors are navigators, offering “roadside assistance” to peers who feel a bit lost or simply need help mapping out the locations of campus resources. Peer Mentor services are free and available on a drop –in basis, no reservation required. The Peer Mentor Center website is located at <http://www.sjsu.edu/muse/peermentor/> .

Course Schedule (as of January 22, 2009)

Note that this schedule is subject to change; any changes will be presented to the class during the regular lecture period.

Date	Lectures, Reading Assignments, and Exam Dates
Jan. 22	Introduction to the Course
Jan. 27	Science as a Process (read Prothero Chapters 1 & 2)
Jan. 29	How the World Works (read Bryson Chapters 12, 14, 15)
Feb. 3	Geological Time (read Bryson Chapters 4, 5, 10)
Feb. 5	Introduction to the Fossil Record (read Prothero Ch. 3)
Feb. 10	History of the Idea of Evolution (read Prothero Ch. 4); <i>distribution of Writing Assignment 1</i>
Feb. 12	Mechanisms of Evolution, Part 1: Natural Selection (read Bryson Ch. 25)
Feb. 17	Mechanisms of Evolution, Part 2: Evo-Devo (read Bryson Ch. 26)
Feb. 19	Speciation and Macroevolution
Feb. 24	Species, Systematics, and the Measure of Life (read Prothero Ch. 5, Bryson Ch. 23)
Feb. 26	Extinction; review for Exam 1 (read Bryson Ch. 6)
Mar. 3	Exam 1
Mar. 5	The Origin and Early History of the Earth (read Bryson Ch. 1-3)
Mar. 10	The Origin of Life and Life During the Archean (read Prothero Chapter 6, Bryson Ch. 19)
Mar. 12	The Proterozoic World and Life (read Bryson Ch. 20, 21); <i>Writing Assignment #1 Due</i>
Mar. 17	The Cambrian Explosion (read Prothero Chapter 7); <i>distribution of Writing Assignment #2</i>
Mar. 19	Paleozoic Marine Life (read Prothero Chapter 8)
Apr. 2	Life Comes to Land (read Bryson Ch. 22)
Apr. 7	The Rise of Vertebrates and Tetrapods (read Prothero Chapters 9 and 10)
Apr. 9	The Rise of Amniotes and the Paleozoic-Mesozoic Transition (read Prothero Chapter 11); review for Exam 2

Date	Lectures, Reading Assignments, and Exam Dates
Apr. 14	Exam 2
Apr. 16	Mesozoic Marine Monsters
Apr. 21	The Diapsids, Part 1: Introduction to Dinosaurs (read Prothero Ch. 12, Bryson Ch. 6)
Apr. 23	The Diapsids, Part 2: <i>T. rex</i> , Therapods, and the Rise of Birds; <i>Writing Assignment #2 Due</i>
Apr. 28	Angiosperms; The Mesozoic-Cenozoic Transition (read Bryson Ch. 13)
Apr. 30	The Origin and Early Evolution of Mammals (read Prothero Ch. 13)
May 5	The Evolution of Horses, Elephants, and Whales (read Prothero Ch. 14)
May 7	The Rise of Humans (read Prothero Ch. 15, Bryson Ch. 28, 29, 30)
May 12	Epilogue and review for the final exam
May 18	Final Exam: 9:45AM-Noon