

Introduction to Dinosaurs and the Mesozoic World – GEOL 14F
Fall 2008



M-F 12:20-1:15 PM, Breslin 103
Lab T 2:20-4:10 PM, Gittleson 225
Library W 2:55-4:20 PM, Axinn Library 245

Instructor: **J Bret Bennington** Office: Gittleson 147, Office Hours: M-F 10:00-11:00

<u>Week</u>	<u>Weekly Topics and Labs</u>	<u>Chapter</u>
Sept 2	Lab – Introduction and Video – “ <i>Dinosaur Hunters</i> ”	
5	The Origins of Dinosaur Paleontology	1
8,9	Overview of Geologic Time / Lab – The Geologic Timescale	3
12	Lecture Canceled	
15,16	Radiometric Dating / Lab – Radiometric Dating	3
17	Reminder – first meeting of Library 001	
19	Fossilization	3
22, 23	Mesozoic Marine Life / Lab – Marine Fossils	10
26	AMNH Field Trip	
29,30	Sedimentary Environments / No Lab – Classes not in session	3
Oct 3	Environments and Dinosaurs Essay Assignment 1 Due	
6,7	Types of Dinosaur Fossils / Lab - Dinosaur Anatomy and Fossils	3
10	Video – “ <i>T. rex Exposed</i> ”	
13,14	Dinosaur Paleobiology / Lab - Estimating Dinosaur Mass	12
17	Dinosaur Food – Plant Life in the Mesozoic	10
20,21	Evolution / Lab – Video – “ <i>The Case of the Flying Dinosaur</i> ”	2
24	Evolution	
27,28	Taxonomy / Lab - Taxonomy of the Hardwarezoans	2
31	Midterm Exam Essay Assignment 2 Due	
Nov 3,4	Dinosaur Tracks / Lab – Estimating Speed from Dino Trackways	11
7,8	Origin of the Dinosauria Field Trip – Peabody / DSP	4
10,11	Cladistic Classification of the Dinosauria (Lecture and Lab)	2
14	Video – “ <i>The Four-Winged Dinosaur</i> ”	
17,18	Origin of Birds / Lab – Dinosaur Origination and Extinction	14
21	The Extinction of the Dinosaurs	15
24,25	The Tertiary World / No Lab – Thursday Schedule	
28	Classes not in session (Thanksgiving Recess)	5, 14
Dec 1,2	Video – “ <i>Judgment Day: ID on Trial</i> ” / Lab – Review / Make up	
5,8,9	Student Presentations – Research Papers Due by Dec. 9 in class	

Final Exam – Date, Time, Location to be arranged

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Instructor: J Bret Bennington

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http://people.hofstra.edu/faculty/J_B_Bennington

Texts: Lucas, S. G., *Dinosaurs*, 5th ed.

Norell, M., *Dinosaurs of the Flaming Cliffs*

Course Description: Dinosaurs and related ‘ruling reptiles’ were the dominant animals on the Earth during the 180 million years of the Mesozoic Era. Recently, there has been a renaissance in dinosaur paleontology resulting in a wealth of new fossils and new insights into the nature and evolution of dinosaurs and the other animals that first evolved in the Mesozoic (birds, placental mammals, modern reptiles and amphibians). Drawing on the latest geological and paleontological research, this course will present the evidence and the scientific detective work that geologists and paleontologists use to reconstruct Dinosaurs and the Mesozoic world. The first part of the course will introduce the student to the concepts and methods that geologists use to reconstruct the worlds of the past and the organisms that inhabited them. The remainder of the course will apply these concepts to study the Mesozoic Era, including the changing geography, climate, and flora, the evolution and behavior of dinosaurs and related animals, and the fossil evidence for the origins of important groups of modern organisms such as flowering plants and birds. Finally, the course will consider current hypotheses for the extinction of the dinosaurs and will discuss how the world changed after the dinosaurs were gone.

Internet Resources: Course materials can be accessed at:

www.hofstra.blackboard.com

Course Grade: The final grade will be based on two in-class exams (10% each) two essays assigned outside of class based on readings (15% each), a short research paper and ppt presentation to the class (20%) and several lab reports summarizing and analyzing the results from our lab activities (30%). All essays and lab reports are expected to be neat, completely explained, word-processed, and written in correct, well expressed English. Unproofread, lackluster, and minimalist papers will be graded as such. All work is due ON TIME and assignments must be handed in as hardcopy in class. I will not accept work emailed to me. The final research paper will be submitted electronically via Blackboard and will be checked for plagiarism using Turnitin.

Field Trips There are two field trips in support of this class. Attendance on these trips is expected – please make the appropriate arrangements to attend ahead of time.

Friday, September 26, 2008 – American Museum of Natural History – 9:00 am – 5:00 pm

Saturday, November 8, 2008 – Yale Peabody Museum and Dinosaur State Park - 9:00 am – 6:00 pm

Transportation and lunch for each trip will be provided by Hofstra. Details will be discussed in class.

Participation in field trips will earn extra credit points that can be applied to the exams.

Library Section This course includes a section of Library 001 taught by Dr. Carol Simon in the Axinn Library. In this course you will be introduced to the reference tools of a modern university library and we will also visit the research libraries at the AMNH and Peabody Museum. Library 001 will also guide you through the process of researching and preparing your final paper and oral presentation.

Academic Honesty: Plagiarism is a serious ethical and professional infraction. Hofstra's policy on academic honesty reads: **"The academic community assumes that work of any kind [...] is done, entirely, and without assistance, by and only for the individual(s) whose name(s) it bears."** Please refer to the "Procedure for Handling Violations of Academic Honesty by Undergraduate Students at Hofstra University" to be found at http://www.hofstra.edu/PDF/Senate_FPS_11.pdf, for details about what constitutes plagiarism, and Hofstra's procedures for handling violations.

Hofstra University Learning Goals and Objectives

Department of Geology:

- 1. Students will develop the basic observational skills they need to function as geoscientists.**
 - 1a. Students will make measurements and use various quantitative units to describe phenomena and will practice converting quantities from one unit to another.
 - 1d. Students will identify the common forms of igneous, metamorphic, and sedimentary rock in hand samples and in field exposures.
 - 1e. Students will identify types of fossils commonly found in Paleozoic, Mesozoic, and Cenozoic rocks.
 - 1f. Students will identify common structures and bed features in igneous, metamorphic, and sedimentary strata.
- 2. Students will perform tests and collect data to analyze geological materials, features, and processes both qualitatively and quantitatively.**
 - 2d. Students will use computer spreadsheets and / or geotechnical software to manage and analyze data.
- 3. Students will apply critical thinking skills such as inductive and deductive reasoning to solve geological problems using the scientific method.**
 - 3b. Using observations and measurements of lithological, paleontological, and / or geochemical properties, students will interpret the history and environment of formation of rock samples and strata.
 - 3c. Utilizing data from paleontology and / or isotopic analysis, students will discriminate between absolute and relative time and will demonstrate the ability to apply a variety of methods to solve problems of dating and stratigraphic correlation in geology.
 - 3e. Students will demonstrate the ability to integrate new data with their current understanding of geologic systems to formulate or evaluate a hypothesis.

5. Students will demonstrate the ability to acquire and communicate scientific data, ideas, and interpretations through written, oral, visual, and digital means.

5a. Students will demonstrate the ability to accurately report on and draw conclusions from close readings of works of scientific journalism and research literature.

5b. Students will use the Hofstra library and online databases to search for, locate, and retrieve publications relevant to a research question or project.

HCLAS General Education Distribution:

2. Students will apply analytical reasoning across academic disciplines.

2c. Apply quantitative, inductive, and deductive reasoning.

2d. Apply abstract thinking and conceptual modeling.

2e. Apply scientific methods to investigate and analyze the natural world.

3. Students will demonstrate proficiency in written communication.

3a. Compose grammatical sentences.

3c. Compose a sequence of paragraphs that develop a point.

3e. Write an effective argumentative essay.

4. Students will demonstrate proficiency in oral communication.

4a. Demonstrate skill in oral communication for purposes such as informing, persuading, and/or defending.

4b. Compose and deliver effective, audience-appropriate oral presentations that develop and support a point; or participate in formal debates; or lead or participate in collaborative discussion of a question or a text.

4c. When appropriate, use visual, auditory, and/or technological aids.

6. Students will demonstrate information literacy.

6a. Conduct research using the variety of information sources available to them.

6c. Integrate sources effectively and ethically through proper citation.

7. Students will demonstrate technological competency.

7a. Demonstrate the ability to use general or discipline-specific technologies to identify, retrieve, analyze, and communicate ideas and information.