

DePaul University/ School For New Learning



SW 371 Dinosaurs

5-week Short Course
Winter 2008

O'Hare
Campus

Tuesdays

Sessions: 1/8,
1/15, 1/22, 1/29 &
2/4/2008

6:30-9:30 PM

Faculty: Kevin F. Downing Ph.D.

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By appointment.

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Note: For a more rapid response please use E-mail as it is my primary means of communication with students.

Course Description: Dinosaurs are one of the most diverse and successful groups of vertebrates in earth's history. Originating over 220 million years ago, they dominated earth's land biomes for over 100 million years and diversified to include the largest land animals in earth's history, a wide range of aquatic groups, and even a diverse clade capable of flight (the birds). Consequently, mammals remained in the background as small to moderate size nocturnal creatures during the dinosaur's long reign until a cataclysmic extinction event 65 million years ago initiated their diversification into modern groups.

This course will introduce students to the remarkable dinosaur group tracking their origin, surveying their success, and evaluating their decline. Learning will emphasize investigation of the forms, function, and variation within the major dinosaur groups as well as the connections of dinosaur evolution to diverse factors such as changing climate, ecology, biological competition, and mass extinction. The learning activities will encompass discussions, readings, lectures, labs, internet resources, museum resources, and original inquiry.

Competencies offered:

Competence	Competence Statement
S-1-B	Can use public or private institutions as resources for learning science.
S-2-A	Can describe, differentiate, and explain form, function, and variation within biological systems.
S-4	Can describe and explain connections among diverse aspects of nature.

Relationship of *Dinosaurs* to the Competencies

Topics and issues in Dinosaur Biology provide a thorough foundation for accomplishing the competencies offered in this course and these relationships are summarized below.

S-1-B: Can use public or private institutions as resources for learning science. Museums and other institutions are the ultimate repositories of fossil dinosaurs unearthed by paleontologists. As such, these institutions can serve as special places to learn about science.

S-2-A: In order to understand the enormous variety and complex interactions of life on earth, paleobiologists collect, describe, and then differentiate fossils into groups. When this has been accomplished, the form, function, and variation within the ancient biological world can be investigated. This course will examine how scientists determine the characteristics of past dinosaur diversity and the corresponding evolutionary processes responsible for generating and extinguishing most dinosaurs on earth.

S-4: The stability of all life on planet earth depends on a great variety of interrelated factors such as climate, ecology, and natural resources. This course will examine the important interconnections of nature that acted to promote the diverse forms and ecologies of dinosaurs for hundreds of millions of years on earth. Students will then consider how our species is similarly dependent on and interconnected to earth's complex and dynamic environment.

Course Goals

General Outcomes: Upon successful completion of this course, all students are expected to have demonstrated:

- A basic knowledge of dinosaur biology.
- An understanding of connections between physical and biological factors governing dinosaur biodiversity.
- An understanding of the major trends and patterns of dinosaur evolution in the fossil record.
- The ability to analyze information generated from scientific investigations on Dinosaurs.
- An understanding of how institutions (natural history museums) support the archiving of earth's history and serve as places of learning.

Specific Learning Outcomes: How students will demonstrate the competencies:

S-1-B: Students will visit a museum with dinosaur collections and collect data about the morphology, evolution and ecology of a specific fossil group. This information will be later integrated into their research paper.

S-2-A: Through independent research, a museum visit and integrating knowledge from course activities (labs, readings/lectures), students will describe and differentiate the character of a dinosaur group of their choice, This discussion, as expressed in the research paper, and presentation will directly assess the forms, function, and variation within the chosen dinosaur group.

S-4: Through independent research, a museum visit and integrating knowledge from course activities (labs, readings/lectures), students will describe the interconnections of earth's past climate, extraterrestrial phenomena, to the mass extinction of life on earth emphasizing on the great dinosaur extinction. This discussion, as expressed in the research paper and presentation will directly assess how life, including the human species, is dependent on earth's environmental variables.

Required Textbook(s):

Gregory Paul (Editor)	The Scientific American Book of Dinosaurs	Publisher: St. Martin's Griffin	St. Martin edition (April 22, 2003) PAPERBACK	ISBN 0312310080	REQ'D
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(Additional Readings, Handouts, and/or Online Resources will be supplied in class)

Course Structure

Students will be actively involved in the learning process. This course will include:

- *Lectures, Discussion, and Debate.*
- *Demonstrations and Simulations.*
- *Readings (Text and Supplementary).*
- *Laboratory Exercises with Biological and Paleobiological Specimens.*
- *Multimedia & Blackboard Course Website*
- *Online Resources*
- *Original Inquiry.*
- *A Self-directed Field Trip to a Natural History Museum.*

Assessment:

For all competencies: 1) written demonstration **of concepts and primary knowledge of topical information** by completion of an **original inquiry** term paper **addressing chosen competence** and focusing on a problematic issue in with dinosaurs. Paper will follow a scientific format. 2) (5-7 minutes) oral presentation of findings on individual research project, 3) Self-directed fieldtrip with report, and 4) attendance/participation.

Assessment Methods and Distribution:

<i>Activity</i>	<i>Weighting for Course Grade</i>	<i>Explanation</i>
<i>Attendance</i>	<i>10%</i>	<i>2%/ Session</i>
<i>Participation in discussions and experiential labs</i>	<i>10%</i>	<i>4 deliverables at 2.5% each</i>
<i>Self-Directed Field Trip exercise</i>	<i>15%</i>	<i>Written Report at 15%</i>
<i>Inquiry-based Research Paper</i>	<i>60%</i>	<i>Assessment will be based on :</i> <ol style="list-style-type: none"> <i>1. Adherence to Scientific Format.</i> <i>2. Quality of Resources.</i> <i>3. Grammar and proper use of citations.</i> <i>4. Content Development including Integration of Scholarly Information</i> <i>5. Reasonable Conclusions based on data/ literature reviewed.</i>
<i>Presentation of Research</i>	<i>5%</i>	<i>Assessment will be based on :</i> <ol style="list-style-type: none"> <i>1. Adherence to presentation guidelines.</i> <i>2. Clarity of content presented.</i>

Grading Scale	Percentage	Verbal Descriptor
A	100-93%	Excellent
A-	92-90%	Very Good
B	89-80%	Good
C	79-70%	Average
D	69-60%	Weak (acceptable)
F	<60%	Unacceptable

ATTENDANCE POLICY

Perfect attendance is expected and essential for this short course. Unless there are verifiable medical or extraordinary personal circumstances, one missed session will result in a "fail" grade for this course, not an "incomplete". The instructor should be notified of the circumstances for all late arrivals or early leaves prior to the class session. No graded work or handouts will be FAXed to students.

ACADEMIC INTEGRITY POLICY

The instructor follows DePaul's policy on Academic Integrity on matters of student conduct including issues of plagiarism.

(Please see the student handbook for details at: <http://studentaffairs.depaul.edu/handbook/>)

INCOMPLETE GRADE POLICY

Students are expected to finish the assignments of their courses in a timely manner. It is at the full discretion of the instructor whether a student shall be granted an incomplete grade with the possibility extended time for completion of class work. The student will need to initiate and file an SNL Incomplete grade contract before the end of the final session to receive an incomplete grade.

ELECTRONIC SUBMISSIONS POLICY

It is acceptable to submit work as e-mail attachments. Submissions should be sent in the Word format and should not be sent as Zipped files.

SCHEDULE

<i>Session</i>	<i>Topics</i>	<i>Chapter Readings (in Paul)</i>	<i>Class Activities</i>	<i>Assignments Due</i>
<i>1</i>	<i>Dinosaur History</i>	<i>1&2</i>	<i>LAB: What are Fossils? How do Fossils Form?</i>	
<i>2</i>	<i>Dinosaur Anatomy and Physiology</i>	<i>6</i>	<i>LAB: Dinosaur Paleobiology</i>	<i>Topic for research</i>
<i>3</i>	<i>Dinosaur Evolution</i>	<i>3</i>	<i>LAB: Evolutionary Relationships</i>	
<i>4</i>	<i>Dinosaur Ecology and Behavior</i>	<i>4,5 &7</i>	<i>LAB: Functional Morphology and Paleocology</i>	<i>Self-directed Fieldtrip Report</i>
<i>5</i>	<i>Dinosaur Extinction: Relationship to Human Continued Existence</i>			<i>Paper Final Draft Oral Presentation</i>