

Geological Sciences 206  
Professor McGhee  
Spring Semester

## DINOSAURS

### LECTURE TOPIC

- 1 Introduction
- 2 Geological time and the evolution of life on Earth
- 3 The major phases of global ecosystem evolution
- 4 Basic concepts of the species and macroevolution
- 5 Principles of dinosaur systematics
- 6 The logic of phylogenetic systematics
- 7 Evolution of the earliest vertebrates
- 8 Invasion of land: the terrestrial ecosystem before the evolution of the dinosaurs
- 9 What is a reptile? The amphibian-reptile transition
- 10 The reptilian precursors to the dinosaur ecosystem
- 11 EXAMINATION I
  
- 12 The archosaur and dinosaur controversies: do the dinosaurs "really exist"?
- 13 Classification of the dinosaurs: traditional views and "hot blooded" challenges
- 14 The herbivorous saurischians: the sauropodomorphs
- 15 The carnivorous saurischians: the theropods
- 16 Predatory dinosaurs and the evolution of the birds
- 17 The armored ornithischians: stegosaurs, ankylosaurs
- 18 The "bipedal" ornithischians: hypsilophodonts, iguanodonts, and hadrosaurs
- 19 EXAMINATION II
  
- 20 The last ornithischians: ceratopsians and the peculiar pachycephalosaurs
- 21 The structure and evolution of the dinosaur ecosystem
- 22 Dinosaur physiology: were the dinosaurs endothermic?
- 23 The hot debate concerning "hot blooded" dinosaurs
- 24 Dinosaur behavior: were the dinosaurs social?
- 25 The End of the Cretaceous: destruction of the dinosaur ecosystem
- 26 What caused the Mass Extinction?
- 27 Ecosystem dynamics: "passive" replacement of dinosaurs by mammals?
- 28 The Paleocene: rapid radiation of mammals in the post-dinosaur world
- 29 FINAL EXAMINATION

### COURSE PRE-REQUISITES:

A genuine interest in dinosaurian paleobiology.

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**TEXTBOOK:**

Paul, G. S. THE PRINCETON FIELD GUIDE TO DINOSAURS. Princeton University Press, Princeton, 320 pp. ISBN: 978-0-691-13720-9

**STUDY GUIDE:**

McGhee, G. R. Second Edition: LECTURE TOPICS IN DINOSAURS. University Publishing Solutions, East Brunswick, 119 pp. ISBN: 978-1-59271-387-5

**ASSIGNED READING in Gregory Paul textbook and McGhee study guide:**

Jan.	19 – pp 9-13 (Intro)	8 – pp 67-161 (Theropods)
	21 – [study guide] (Time)	10 – pp 32-33, 52-53 (Birds)
	26 – [study guide] (Ecosys)	22 – pp 214-238 (Thyreophorans)
	28 – [study guide] (Evol)	24 – pp 239-240, 273-316, 26, 37 (Ornithopods)
Feb.	2 – [study guide] (Syst)	29 – EXAM II
	4 – [study guide] (Syst)	31 – pp 240-272 (Margocephalians)
	9 – [study guide] (Verts)	Apr. 5 – pp 15-22 (Ecosys Summary)
	11 – [study guide] (Tetra)	7 – pp 27-32, 44-51 (Physiology)
	16 – [study guide] (Reps)	12 – pp 44-51 ("hot blooded"?)
	18 – [study guide] (Archs)	14 – pp 38-44 (Behavior)
	23 – EXAM I	19 – pp 23-24 (Ecosys Collapse)
	25 – pp 13-14, 30 (Dinos)	21 – pp 23-24 (Extinction)
Mar.	1 – pp 64-65 (Classif)	26 – pp 9, 54-55 (Ecosys Dynamics)
	3 – pp 163-213 (Sauropods)	28 – pp 9, 54-55 (Ecosys Dynamics)

**COURSE MARKS:**

Each examination counts as one third (33.3%) of the total course grade.

**IMPORTANT DATES:**

Lecture 11 - Examination I  
Lecture 19 - Examination II  
Lecture 29 - Examination III

**OFFICE HOURS:** Tuesdays and Thursdays, 12:00 noon to 1:00 pm.  
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