

# Course Syllabus

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Geology 303: Dinosaurs and Their Environment  
3 credits

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## OVERVIEW AND GOALS OF COURSE:

In this course we will examine what we know (or think we know) about dinosaurs. No living animal is really like a “dinosaur” as we think of them. Birds are technically dinosaurs, but obviously they differ a lot from animals like *Tyrannosaurus* and *Stegosaurus*. What can we tell about these fantastic creatures based on their bones and their tracks? Sometimes we can tell quite a lot, but there are also gaping holes in our knowledge of dinosaurs. In this course we will use physical evidence and analogies with living animals to try to assemble a picture of how dinosaurs looked and behaved.

Intended Learning Objectives (*and Skills Developed*):

### **GUR academic competencies and perspectives:**

2. Analyze and interpret information from varied sources, including print and visual media. (*Be able to critically assess reconstructions of dinosaur life habits, in both print and video form, based on fossil evidence.*)

3. Use quantitative and scientific reasoning to frame and solve problems. (*Be able to formulate a hypothesis and design a critical test for the function of dinosaur skeletal elements.*)

### **Specific Course Objectives:**

1. Understand the relationship between form and function in dinosaurs. (*Be able to assess the relative speed and agility of a dinosaur based on skeletal features.*)
2. Understand the use of modern analogues in the study of dinosaurs. (*Be able to identify a living animal(s) that is a suitable modern functional analogue for a particular dinosaur.*)

This course is a SCI GUR. Prerequisites for this course are GEOL 101 or GEOL 211; or GEOL 101 and GEOL 211A; or SCED 202 and GEOL 211A; or Biology 101; or Biology 204 or permission of the instructor.

### **TEXTBOOK:**

- Hansen, T.A., *Dinosaurs and Their Environment*, Great River Technologies, ISBN: 978-1-61549-891-8

There is a required online text for this course which is available at the bookstore or you can order one yourself at <http://www.grtep.com> ([Links to an external site.](#))(click on the “Click Here to Purchase” button, you will need a credit card. **Be sure to purchase the "Fall 16: GEOL 303 Online\_CRN 44082" version.**). This ebook contains important background information, links to online resources, readings that can be used for extra credit (more on extra credit possibilities later) and chapter quizzes that will comprise 25% of your grade. **You must buy the text in order to receive credit for these quizzes.**

My PowerPoint's and study guides are posted within the course site under Modules.

## **COURSE REQUIREMENTS:**

You will need access to a computer and the internet.

There are 21 topics covered in this course. The online textbook has a chapter with objectives, content and a quiz for each topic. There are also powerpoints posted in the Modules for each topic with a recorded narration. You must read each chapter in the text and do the online quizzes. You must also watch the powerpoints. In addition there are two videos (links to YouTube will be provided in the powerpoints) you will need to view.

Your grade will be based on the online chapter quizzes, exams and optional extra credit reports. There are no other written assignments.

## **CALENDAR:**

For each topic below, you should read the appropriate chapter in the online textbook, take the quiz for that topic in the textbook and watch the powerpoint lecture. The content of this course is divided into three modules, each of which ends in an exam. The exams will be held on October 10, November 7, and December 5, 2016. The chapter quizzes for each exam will close on the morning of the exam day, i.e. you must complete the reading and chapter quizzes by 8 AM of the exam day for that particular module. I have outlined below a schedule that will allow you to accomplish this.

### **Week            Topics (each is a chapter title in the text and powerpoint lecture)**

Week One:    Introduction, Fossils and Preservation, Skeletons, Classification, Relationships and Origin.

Week Two:    Big Theropods 1 and 2

Week  
Three:        Small Theropods, Birds

**October 10   TAKE EXAM 1**

Week Four: Exam 1; Sauropodomorpha 1-2

Week Five: Sauropodomorpha 3, watch video "Time of the Titans" (email me if you have difficulty getting the video)  
Thyreophora 1

Week Six: Thyreophora 2-3

Week Seven: Ornithopoda 1-2

**November 7**      **Take Exam 2**

Week Eight: Take Exam 2, Marginocephalia 1,

Week Nine: Marginocephalia 2, Flying Reptiles with video (email me if you have difficulty getting the video)

Week Ten: Swimming Reptiles, Thanksgiving Holiday

Week Eleven: Endothermy (online text only, no powerpoints), Extinction of Dinosaurs, Study for Final Exam, h  
remaining extra credit reports by 8 AM on December 5.

**Take Final Exam on December 5**

## **GRADING/TESTING:**

Your grade will be based on three exams (not cumulative), each of which will be worth 25% of your grade (amounting to 75% of the total grade) and on the cumulative total of your quizzes in the online text which will be worth 25%. You will take your exams on Canvas (look under "Quizzes" on the Canvas course homepage). The exams will be 40-50 multiple choice and/or true-false questions. The exams will be open from 8 AM to 9 PM on the exam day. You will have 60 minutes to complete each exam. The exam will close at 9 PM, so be sure to start the exam no later than 8 PM. If you need extra time, have Disability Resources for Students (DRS) send me a note and I will extend your time

accordingly. **The chapter quizzes preceding each exam will close (i.e. you will no longer have access to them and will lose points) at 8 AM on the exam day so be sure to finish them before you take the exam for that module.**

My grade breakdown is as follows: 93% and up = A, 89.5% and up = A-, 87% and up = B+, 83% and up = B, etc. A minimum score of 59.5% is necessary for a Pass. A minimum score of 69.5% is necessary for minor credit.

### **Extra Credit:**

You may get extra credit by writing a 500 word abstract of an article relevant to dinosaurs. Each satisfactory summary that you submit will add one percentage point to your final grade. There are links to articles suitable for abstracts in your online text. You may email me a copy of the abstract and include the link to the original article. You may also use articles that you find outside of those cited in the online text but **the original article must be from a reputable source, e.g. technical scientific literature or a reputable journal such as Natural History, Scientific American or Discover Magazine, and it must be at least 1500 words long. You can find out how many words in the article by copying and pasting the text into a Word document and doing a “word count” in the “Review” tab.** If you have a question about the suitability of an article email the link to me for approval before you do the abstract. You are allowed a total of 6 extra credit reports. I will accept extra credit reports up to 8 AM on the Final Exam day.

### **HELP WITH THE COURSE:**

Email is the best way to reach me at [thor.hansen@wwu.edu](mailto:thor.hansen@wwu.edu). I check it daily and will respond quickly. If you have any questions about the assignments or the course in general please email. You may also call or leave a message at my office phone: 360-650-3648.

### **ABOUT THE INSTRUCTOR:**

Thor Hansen is a Professor in the Geology Department at Western Washington University. He received his Bachelor of Science degree in geology at George Washington University in 1972 and Ph.D. at Yale University in 1978.

“I am almost, but not quite, old enough to have actually seen dinosaurs. I was trained as an invertebrate paleontologist (specializing in clams and snails) but have always been fascinated by dinosaurs. I started the classroom version of this course in 1993 and it has always been one of my favorite courses to teach. In the classroom I try to make use of lots of different media; images of dinosaurs from museums around the world, videos, audio recordings, and classroom demonstrations. As much as possible I have incorporated these into this online course. If you like dinosaurs, I think you will enjoy this course.”