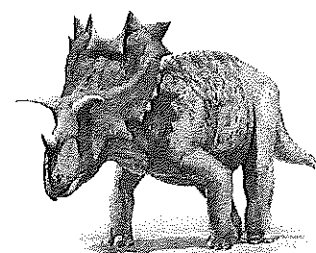
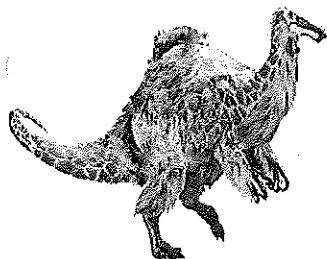


SYLLABUS: EARTH SCIENCES 65  
 THE NATURAL HISTORY OF  
 DINOSAURS

UC Santa Cruz

SPRING, 2017



LECTURE SCHEDULE

<u>WEEK</u>	<u>DATE</u>	<u>CLASS/TOPIC</u>	<u>READING</u>
1	4/4	1 Introduction: Logistics, Quiz, Dinosaurology Highlights	Chapter 15
	4/6	2 Geologic time, Stratigraphy, Plate tectonics, Middle Earth	Ch. 2
2	4/11	3 Fossils, Bone preservation and Taphonomy	Ch.1, Ch. 14 (pg. 356, Box 14.2)
	4/13	4 Evolution and Classification	Ch. 3
3	4/18	5 Fantastic Triassic: Dinosaur origins	Ch. 5, 14 (357-67)
	4/20	6 Pt. III <i>Ornithischia</i> & <i>Thyreophorans I</i> – Stegosauria: Jurassic Pork	Pt. III, Ch.10 (239-50)
4	4/25	7 <i>Thyreophorans II</i> – Ankylosauria: How Low Did They Go?	Ch.10 (251-264)
	4/27	8 <i>Marginocephalians I</i> – Pachycephalosauria: Cretaceous Boneheads	Ch. 11 (267-77)
5	5/2	9 <i>Marginocephalians II</i> – Ceratopsia: Prickly Pairs	Ch. 11 (278-98)
	5/4	10 <i>Ornithopoda</i> : Silence (?) of the Lambeosaurs	Ch. 12
6	→5/9	11 <b>MIDTERM EXAM</b>	
	5/11	12 Pt. II <i>Saurischia</i> & <i>Sauropodomorpha I</i> – The World at Large	Pt. II, Ch. 9
7	5/16	13 <i>Sauropodomorpha II</i> – Superdupersauruses	Ch. 9, 14 (358-62, 367-77)
	5/18	14 <i>Theropoda I</i> – Assassin’s Creed: Theropod Lifestyles	Ch. 6
8	5/23	15 <i>Theropoda II</i> – The Junkyard Dogs	Ch. 7
	5/25	16 <i>Theropoda III</i> – Birds: When Feathers Flew	Ch. 8
9	5/30	17 California Dinosaurs & Friends	TBA
	6/1	18 Dinosaur Metabolism: What Made Them Tick?	Ch. 13
10	6/6	19 Dinosaur Guts on the Moon: Diary of a Really Bad (June?) Day ~66,043,000 BC	Ch. 16
	6/8	20 Oops!...We Did It Again: Cenozoic Rebound	No Reading
	→6/15 (Thursday)	<b>FINAL EXAM: 8:00 – 11:00 p.m. (Classroom B206)</b>	

**EARTH 65: Natural History of Dinosaurs**  
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## GENERAL COURSE INFORMATION

### Instructors

**Who is the lead course instructor?** *Hilde Schwartz* (Earth and Planetary Sciences Dept.)

**Where is Hilde's office?** Earth & Marine Sciences Building, Rm. A347 (third floor, west wing)

**How can I contact Hilde?**

Office Phone: 459-5429

\*Email: [hilde@ucsc.edu](mailto:hilde@ucsc.edu) \*by FAR the best way to contact Hilde outside of class

Office hours: Wednesday, 10:00 – 12:00 p.m., and by appointment

**Who are the TAs for this class?**

Dan Killam ([dekillam@ucsc.edu](mailto:dekillam@ucsc.edu))

Karen Petersen ([kalpeter@ucsc.edu](mailto:kalpeter@ucsc.edu))

**Who are the TA assistants (TAAs) for this class?**

Laurel Teague and Cody Lee

**When are the TA/TAA office hours and where are their offices?**

They will let you know in discussion section. By week #2 this information will be posted on the course website (see below).

### Course materials

**Required text:** *Dinosaurs, A Concise Natural History, 3rd edition*, 2016, by David Fastovsky and David Weishampel, Cambridge University Press (paperback).

### Internet resources

**Course website:** <http://www.ic.ucsc.edu/~hilde/eart65/> username: eart65 password: godzilla

➤ Print out handouts from website before coming to class

**eCommons class page:** check your eCommons 'quicklinks'; in Earth 65 eCommons will be used for announcements, exam grade distribution and weekly practice quizzes

### Course requirements

- prompt, regular lecture attendance
- prompt, regular attendance of at least seven sections (sections 4 and 9 are optional)
- satisfactory completion of the midterm and final (given in class)
- satisfactory completion of seven section assignments
- satisfactory completion of your dinosaur research project (see pg. 4)

### Course grade

Your final grade in EARTH 65 will reflect the quality of your work on the following:

First exam: 110 points (24%)

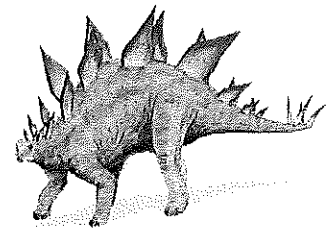
Second exam: 125 points (28%)

Section exercises: (seven exercises, 15 pts. per lab; 5 pts. attendance/10 pts. work): 105 points (23%)

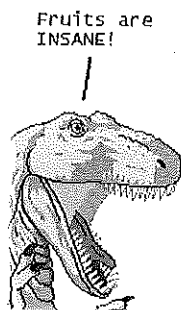
Research (Adopt-a-Dinosaur) Project: 110 points (24%)

Extra credit – 1) You may earn 5 pts. of extra credit by giving a brief (1 minute, well prepared)

presentation of breaking dinosaur or Mesozoic news in class (reported for the first time within two weeks of your presentation); three presentations per student allowed during the quarter. Only one student per story – the first to get to lecture and 'claim' a particular news item, wins. Also see page 4.



**Total course points possible: ~450 points**



## EARTH 65 DISCUSSION SECTIONS

You *must* attend 7 of the 9 one-hour Earth Sciences 65 sections you enrolled in, beginning the *second* week of the quarter (see schedule below for optional sections). The sections are designed to a) help you understand/keep up with/become more engaged with dinosaur science and b) successfully complete your dinosaur research project. Section dates, times, room # and activities are listed below. Completed assignments must be turned in in section, no more than one week after the section activity.

### Section times and rooms (all are in the Earth and Marine Sciences building, Room D258)

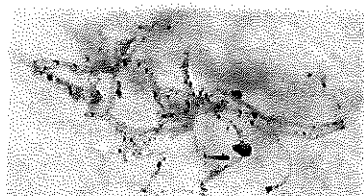
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|---|--|
| 1. T 6:00-7:00 pm, D258 ( <i>Karen</i> )  | 6. Th 9:00-10:00 am, D258 ( <i>Laurel</i> )  |
| 2. T 7:00-8:00 pm, D258 ( <i>Karen</i> )  | 7. Th 10:00-11:00 am, D258 ( <i>Laurel</i> ) |
| 3. W 9:00-10:00 am, D258 ( <i>Karen</i> ) | 8. Th 6:00-7:00 pm, D258 ( <i>Cody</i> )     |
| 4. W 6:00-7:00 pm, D258 ( <i>Dan</i> )    | 9. Th 7:00-8:00 pm, D258 ( <i>Cody</i> )     |
| 5. W 7:00-8:00 pm, D258 ( <i>Dan</i> )    | 10. W 5:00-6:00 pm, D258 ( <i>Dan</i> )      |

### Section Activities

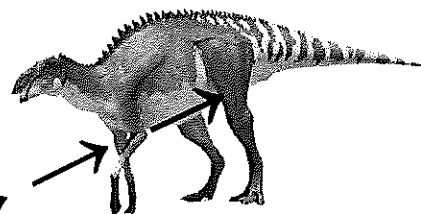
WEEK #	SECTION #	SECTION TOPIC/ACTIVITY
1	No section	None
2	1	Fossils and fossil preservation
3	2	Dinosaur project research/sleuthing strategies
4	3	Dinosaur project research/anatomy
5	4( <i>optional</i> )	<i>Exam Review</i> (optional, recommended)
6	5	Dinosaur project research/classification and cladograms
7	6	Weighing dinosaurs
8	7	Dinosaur strength, shape and mass
9	8	Dinosaur Tracks
10	9( <i>optional</i> )	<i>Exam Review</i> (optional, recommended)

## EARTH 65 PRACTICE QUIZZES

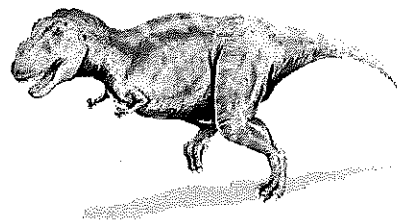
...will be uploaded on Fridays to the Earth 65 eCommons site. You are encouraged, but not required, to take advantage of these review opportunities. Some questions from these quizzes will be incorporated into the midterm and final. Therefore you may and should ask, in section or in lecture, about any quiz items that confuse you.



**Fun fact:** A paper published in Jan. 2017 reported the discovery of *original organic material* (collagen) in an 80 million year old *Brachylophosaurus* bone!



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## RESEARCH PROJECT/ADOPT-A-DINOSAUR

Each Earth Sciences 65 student must complete a research project focused on a particular genus of dinosaur. You will choose your research genus/topic the 3<sup>rd</sup> week of the quarter (at the latest), from a list of ~600 dinosaur genera provided in section and on the course website. No two students will research the same dinosaur. Your adopted topic should effectively become your dino alter-ego\* during the course, as you immerse yourself in your subject's habitat, lifestyle, anatomy, diet and 'friends'.

\*Coming to the final exam adorned, ~accurately, as your dinosaur = extra credit.

Your finished research project must be in the style of an *illustrated, well-written, scientifically robust and annotated, professional-looking* report. Certain contents/chapters are required, but you are allowed/encouraged to add chapters and/or creative flourishes if you wish. Some project chapters will be supported by section assignments (see pg. 3). Therefore, you will work on your research topic and have feedback from instructors throughout the quarter. You will receive more instructions and advice about this project in class, in section and on the course website. In order to complete this project you will need use Science and Engineering Library resources, digitized scientific books and journal articles (available online) and, to a lesser extent, 'popular' books, movies, music and online references.

Required project chapters are: \*\*1) History of discovery and naming, 2) Anatomy, \*\*3) Classification and related dinosaurs, 4) Geographic distribution and time range (where did your genus live and how long did it likely exist?), 5) Environment (what climate, animals, plants, geologic events, etc... characterized the habitat(s) in which your dinosaur lived?), 6) Lifestyle/Behavior (speculative, based on trace fossils and anatomy of your dinosaur + other related dinosaurs), 7) A Day in the Life... (a fact-based, creative account of what life might have been like for your dinosaur) and \*\*8) References cited.

\*\*Chapters with double asterisks are supported by section assignments.

### Academic integrity/Grading policies/Exams

Individual research and exam responses in Earth 65 must represent *original work*. In addition, research done by others that you use in your research project must be properly attributed. These are fundamental points of the UC Santa Cruz *Code of Student Conduct* (UCSC Student Handbook, Section 100.00; <http://deanofstudents.ucsc.edu/student-conduct/student-handbook/index.html>) and practiced by decent human beings everywhere. Instances of cheating or plagiarism will be dealt with according to prescribed UCSC policy. If you are not sure what constitutes cheating (this includes furnishing false information and creating improper academic disadvantage to others) or plagiarism, please read the UCSC *Code of Student Conduct* carefully and/or speak with one of your Earth 65 instructors.

Section work in Earth 65 will be collaborative: you will work in groups, in which members should discuss concepts and work together to achieve results. However, each student must individually write up/draw/fill out each section exercise using their own words/artwork/brains. Every section assignment will be due at the beginning of the following week's section. Late section work will be docked 10% per day late. **Research projects will be due at the beginning of the final section.** Late projects (submitted more than 5 minutes after the section begins) will be docked 10 points per day.

Earth 65 exams will be graded on a curve. Due to the size of the class, tests will (regrettably) be machine-graded, Scantron-style affairs. Each student must bring her/his own Scantron each exam day. The Scantron we'll use is the large-format, pink variety (*not* the narrow green form) available at the Bay Tree Bookstore.