

ANTH 4703/ 5703: Mammalian Evolution and Osteology

CLASS TIMES

Monday/ Wednesday, 4:35-5:50pm, Old Main 118

CONTACT INFORMATION

Dr. Claire Terhune

Department of Anthropology

Old Main 339

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Office Hours: Monday/Wednesday 3:00-4:30pm or by appointment

TEXTBOOK

- Required texts:
 - Vaughan TA, Ryan JM, Czaplewski NJ. 2013. Mammalogy. Jones & Bartlett Learning. 6th Edition.
 - Benton M. 2014. Vertebrate Paleontology. Wiley-Blackwell. 4th Edition
 - Additional readings and lab materials will also be provided via BlackBoard (indicated on schedule as “Handouts”)

COURSE DESCRIPTION

This course will focus on describing the evolutionary history of mammals, a group of vertebrates that include over 5,000 species in 29 orders, and will provide an overview of living species and their identifying features.

OBJECTIVES

Through a combination of lectures and hands-on experience this course will:

- Review the basics of evolutionary theory, geology/taphonomy, and osteology
- Briefly review the history of pre-mammal time and the rise of vertebrates
- Discuss the origin of mammals and understand what makes a mammal unique
- Survey fossil and living mammalian groups

COURSE REQUIREMENTS

Performance in the course will be assessed via a variety of deliverables:

Deliverable	Undergraduate	Graduate
Osteology Quiz	5%	2.5%
Mammal Basics Quiz	5%	2.5%
Exam 1	20%	17.5%
Exam 2	20%	17.5%
Exam 3 (includes lab practical)	25%	20%
Lab Participation	5%	5%
Lab Notebook	5%	5%
Mammal Throwdown	15%	15%
Research Paper	Not applicable	15%
Total	100%	100%

Exams

There will be three exams spread evenly throughout the semester. Exams will consist of multiple choice, fill in the blank, matching, and/or short answer questions. Make-up exams will only be issued for excused absences (illness, funerals, or

other family emergencies) and supporting documentation must be provided (doctor's note, funeral notice). If it becomes necessary for you to miss an exam, you MUST notify Dr. Terhune BEFORE the exam date and time so that appropriate arrangements can be made. Make-up exams must be taken within one week of the original exam date.

Laboratory

Six classes throughout the semester will be designated as laboratory sessions. These meetings will be held in our regular classroom and will be used to provide hands-on experience with osteological specimens and models. Attendance at lab sessions is mandatory and no make-up lab sessions will be given. **Participation** in lab activities will count for 5% of your overall grade; participation will be evaluated via instructor assessment and peer evaluations. Throughout the course students will record their observations in a **lab notebook** that will be turned in for evaluation at the end of the semester (5% of overall grade). A single **lab practical** will take place at the end of the semester as part of the final exam; material on this practical will be cumulative.

Mammal Throwdown

Each student will be present a brief (~2 minute) synopsis of the evolutionary history of a specific extant or fossil mammal species to the class close to the end of the semester. A one page synopsis of this history will be due on that date. The presentation and write-up will count for 15% of the final grade. More details on this assignment will be provided as the course progresses.

Research Paper (Graduate section only)

In addition to the above outlined expectations, students enrolled in the graduate section of the course will be required to complete an additional assignment that accounts for 15% of their overall grade. This assignment will consist of a written manuscript (no more than 12 pages of double spaced text, not including references). Ideally, the topic should be tailored to the student's research interests. For example, students may wish to briefly outline the evolutionary history of a mammalian clade (i.e., Cervidae), or they may wish to review the current research on a specific topic (i.e., evolution of the mammalian jaw). Materials for the paper will be due in three stages: Topic Outline (3/15% of research paper grade), First Draft (6/15% of research paper grade), and the Final Draft (6/15% of research paper grade). Specific guidelines for the paper will be provided via BlackBoard during the semester.

Late Assignments

Assignments are due to Dr. Terhune on the date assigned in the syllabus. Late assignments will only be accepted for a week after the original due date, and for each day an assignment is delayed 5% points will be deducted from the assignment's grade.

Grading Scale

A: 90 – 100%
B: 80 – 89.99%
C: 70 – 79.99%
D: 60 – 69.99%
F: Below 60%

*Please note I do not round up from this scale.

ACADEMIC HONESTY

From the provost: "As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail."

"Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy,' which may be found at <http://provost.uark.edu>. Students with questions about how these policies apply to a particular course or assignment should immediately contact the instructor."

The "Policy on Academic Honesty" is at <http://provost.uark.edu/245.php> and the penalties for offenses are outlined are at <http://provost.uark.edu/246.php>.

TECHNOLOGY POLICY

The use of LAPTOPS, CELL PHONES, AND TABLET COMPUTERS is not permitted for any reason. This includes all of the following:

- Texting/ emailing/ using cell phones in any way
- Using cell phones to check the time
- Use of cell phones, tablets, or laptops to take notes

Several studies have shown that note-taking on laptops is less effective than taking notes by hand, in terms of learning and retention. Research has also demonstrated that students who take notes on laptops tend to write what the professor/slides say verbatim, which leads to less integration of information and shallower processing, compared to students who take notes by hand (Mueller & Oppenheimer, 2014; <http://pss.sagepub.com/content/25/6/1159>). Students that violate this rule will be asked to leave class and will not receive attendance credit for that day. Students with CEA accommodations may be exempt from this policy (depending on the nature of the accommodations), but any such students must speak directly with Dr. Terhune about this issue.

OTHER INFORMATION

- **Emergency Procedures.** Many types of emergencies can occur on campus; instructions for specific emergencies such as severe weather, active shooter, or fire can be found at emergency.uark.edu.
- **Disability Resources.** University of Arkansas Academic Policy Series 1520.10 requires that students with disabilities are provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please verify your eligibility through the Center for Educational Access (contact 479-575-3104 or visit <http://cea.uark.edu> for more information on registration procedures). **If you are registered with CEA and require extra time for the exam, it is your responsibility to make an appointment with CEA. Your exam will be proctored by CEA staff at their testing center.**

This syllabus is subject to change at the discretion of the professor.

CLASS SCHEDULE (Subject to Change)

Date	Topic	Deliverable	Reading
8/22/2016	Course introduction; Overview of evolutionary theory		None
8/24/2016	Geology and classification		Benton Ch 2; Vaughan et al Ch 1
8/29/2016	Osteology and anatomy basics		Handouts; Vaughan et al Ch 3 ("The Skeleton" section)
8/31/2016	Lab: cladistics and osteology review		Handouts
9/5/2016	LABOR DAY- NO CLASS		
9/7/2016	Brief history of premammal time 1		Benton Ch 1, 3-6; Vaughan et al Ch 2 (up to "Early Mammals" section)*
9/12/2016	Brief history of premammal time 2		Benton Ch 1, 3-6; Vaughan et al Ch 2 (up to "Early Mammals" section)*
9/14/2016	Lab: osteology review/ pre-mammals	Osteology Quiz	Handouts
9/19/2016	EXAM 1		N/A
9/21/2016	What does it mean to be a mammal?		Vaughan et al Ch 3
9/26/2016	Mammal origins and monotremes		Benton Ch 10 pgs 318-343; Vaughan et al Ch 2 and 5
9/28/2016	Overview of mammalian clades		Vaughan et al Ch 4 and 7; Benton Ch 10 pgs 343-346; Handouts
10/3/2016	Visit to UA Museum Collections		None
10/5/2016	Marsupials	Mammal basics quiz	Vaughan et al Ch 6; Benton Ch 10 pgs 346-350
10/10/2016	Marsupials continued and Xenarthra	Paper Topic/ Outline Due	Vaughan et al Ch 6 and 10 (Cingulata and Pilosa); Benton Ch 10 pgs 350-355
10/12/2016	Afrotheria: Macroscelidea/ Afrosoricida/ Tubulidentata		Vaughan et al Ch 8; Benton Ch pgs 350-360
10/17/2016	FALL BREAK- NO CLASS		
10/19/2016	Afrotheria: Proboscidea/ Sirenia/ Hyracoidea		Vaughan et al Ch 9; Benton Ch pgs 350-360
10/24/2016	Lab: Marsupials/ Xenarthra/ Afrotheria		None
10/26/2016	EXAM 2		N/A
10/31/2016	Laurasiatheria: Cetartiodactyla		Vaughan et al Ch 18 and 19; Benton Ch 10 pgs 361-383
11/2/2016	Laurasiatheria: Perissodactyla		Vaughan et al Ch 17; Benton Ch 10 pgs 361-383
11/7/2016	Lab: Laurasiatheria 1		None
11/9/2016	Laurasiatheria: Carnivora	Paper Draft Due	Vaughan et al Ch 16; Benton Ch 10 pgs 361-383
11/14/2016	Laurasiatheria: Pholidota/ Chiroptera/ Eulipotyphla		Vaughan et al Ch 10 (Order Pholidota), Ch 14, and Ch 15; Benton Ch 10 pgs 361-383
11/16/2016	Lab: Laurasiatheria 2		None
11/21/2016	Euarchontoglires: Rodentia/ Lagomorpha		Vaughan et al Ch 13; Benton Ch 10 pgs 383-388
11/23/2016	THANKSGIVING BREAK- NO CLASS		

11/28/2016	Euarchontoglires: Dermoptera/ Scandentia/Primates		Vaughan et al Ch 11 & 12; Benton Ch 10 pgs 388-391; Benton Ch 11
11/30/2016	Lab: Euarchontoglires		None
12/5/2016	Mammal Throwdown!	Mammal Species Write- up Due	None
12/7/2016	Conclusion/ review/ makeup day		None
12/9/2016	Dead Day- No class; Final Paper Due by 5pm		
12/14/2016 3:15-5:15pm	<u>Lab Practical and Exam 3; Lab Notebooks Due</u>		
*I realize this is a big chunk of reading; we'll be going over information very quickly, so even if you don't read every word of these chapters, make sure to use them as a guide and source for additional information in your studies			