ANT 388 -- Human Evolution
Fall 2017, Unique 31610

Instructor
Denné Reed,
Office: SAC 5.146
phone: (512) 471-7529

Office Hours
Tuesdays 10:00 - 11:00 am or by appointment
e-mail: reedd@mail.utexas.edu

Course Description
This course explores human evolution starting from the last common great-ape ancestor up through the origin of modern humans. We will examine closely the fossil record that informs our understanding of hominin evolution, which has benefited from many recent discoveries, looking at the behavioral and morphological adaptations that characterize the various stages of human evolution. Along the way we'll explore the history of fossil discoveries and the trends in contemporary thinking about human origins from Darwin to the present. Students are encouraged to think critically and broadly about the impact that theories of human origins have on contemporary culture and on other related subdisciplines of anthropology. The course integrates aspects of human anatomy, functional morphology, systematics, biogeography, and climate change, along with evolutionary and behavioral ecology.

Course Goals
1. Develop a comprehensive knowledge of human evolutionary theory and the underlying evidence that supports it, especially the hominid fossil record.
2. Develop the necessary skills and knowledge in anatomy, genetics, and evolutionary theory to properly evaluate and contextualize the fossil record as well as forthcoming discoveries.
3. Learn the history of fossil discoveries, the major research questions, and the trends that have shaped human origins research since the 1920s.
4. Hone critical thinking skills, and the ability to articulate ideas and present findings before a professional audience.

Learning Outcomes
- Master the names, geographic distributions, temporal distributions and key fossils associated with all known hominin taxa.
- Critically evaluate and apply the relevant tenants of evolutionary theory to the interpretation of the fossil and archaeological record.
- Understand the basic underlying tenants of anatomy, geochronology, sedimentology, paleoecology, and taphonomy necessary for informed analysis and interpretation of the prehistoric record.
- Develop the technical and analytic proficiency for locating, collecting, analyzing and interpreting fossil data from online sources and the professional academic literature.
- Learn to critique, evaluate and communicate ideas, hypotheses and notions about human evolution. Be able to conduct an informed professional conversation on the topic of human evolution.
- Learn to express new ideas and research findings to a professional academic audience. Learn as well to communicate clearly about human evolution and human origins to students, educators, the public and other non-technical audiences.
**Grading and Expectations**
Grades in this course are based on in-class participation (10%), a midterm exam (25%), a final exam (25%), an in-class presentation (20%) and a class paper (20%).

*Participation*—this is a discussion based course and student participation in class is vital if we’re going to have a productive learning environment. Everyone is expected to come to class prepared with short summaries of the day’s readings including their thoughts, comments and questions.

*Exams*—there will be a midterm and a final exam. The exams will be a combination of multiple choice, short answer, and short essays. Exams will include some practical elements such as identifying specimens and important anatomical traits.

*Presentations*—students will prepare an in-class presentation focusing on a topic of their choice. Topics can include a general trend in human evolution, or a report a specific fossil or site.

*Papers*—Students will also prepare a 10 page research paper on the same topic as their presentation.

**Course Schedule Fall 2017**

| Aug  | 30 | **Course Introduction**  
Review of course expectations, goals and grading, review of research tools, databases and online paleoanthropology tools. |
|------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |    | **Why Study Human Evolution?**  
What are the big questions in the study of human origins and their broader relevance to anthropology and society? |
|      |    | **Behavioral and Anatomical Characteristics of Primates and Humans**  
What anatomical, physiological and behavioral traits distinguish primates from other mammals, and humans from other primates? |
| Sept. | 6  | **Paleo-environments and the Plio-Pleistocene World**  
Paleo-environments and paleoecology provide the broader context of human evolution. This week we evaluate methods for paleo-environmental reconstruction including stable isotope analysis, climate cycles and modern savanna ecosystems. |
|      | 13 | **Finding and Dating Fossils**  
How are fossil preserved, discovered and dated? Review principles of taphonomy, and geochronology that form the foundation for establishing the chronological context of the human fossil record. |
|      |    | **Classifying Fossils**  
Review the general principles of evolution, macroevolution and how they apply to the fossil record. How are fossil species identified, classified and related to one another in a phylogenetic tree? |
|      | 20 | **Miocene Hominoids**  
How did our lineage start? We review the fossil record just prior to the division of the chimpanzee and human lineages. Outline the fossil record relevant to our current understanding of the Chimpanzee-Human Last Common Ancestor (CHLCA) |
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
</table>
| 27   | Early Hominins of Southern Africa  
Modern paleoanthropology got its start in South Africa. We review the numerous fossil discoveries form the fossil cave sites of South Africa starting with the earliest discoveries at Taung to the most recent finds from Malapa and Rising Star. |
| Oct  4 | Midterm Exam |
| 11   | Early Hominins of East Africa  
While South Africa has yielded numerous fossil remains, it is East Africa that has yielded not only well preserved but very well dated fossil discoveries. We review the numerous fossil finds from East and Central Africa starting with the oldest putative hominins through recent finds of diverse fossils from Ethiopia. |
| 18   | Early Hominin Paleobiology and Phylogeny  
Taking a step back we review the major trends and adaptations that characterize early hominins in Africa including bipedality, megatony, hunting/scavenging, brain expansion. |
| 25   | Emergence of Culture, origin of Homo  
The origins of our own genus, Homo, have come under intense scrutiny recently, in part due to exciting new fossil discoveries from eastern Africa. We review the latest research surrounding the origin of our genus including recent finds from Ethiopia and Kenya along with the origins of material culture. |
| Nov. 1 | Homo Erectus  
Homo erectus came to occupy a wide geographic range across the Old World. It was also one of the earliest fossil hominin taxa discovered. This week looks back at the fossils and history of this key pillar in human evolution. |
| 8    | Archaic Hominins of the Middle Pleistocene  
What taxa bridge Homo erectus and modern Homo sapiens and how are they related? Genetic and fossil evidence has produced several exciting new discoveries that complicate our understanding of Middle Pleistocene people. |
| 15   | Modern human origins, the genetic evidence  
The advent of genetic analysis for reconstructing human origins produced a dramatic reinterpretation of how our species, Homo sapiens, arose and spread across the globe. The debate brought many branches of paleoanthropology to bear and promoted the development of more comprehensive theories regarding modern human origins. |
| 22   | Thanksgiving NO CLASS |
| 29   | Modern human origins, the fossil evidence  
How does the genetic evidence for modern human origins jive with the paleontological and archaeological evidence? Furthermore what does it really mean to be an anatomically modern Homo sapiens and is the morphological evolution concurrent with the behavioral and cultural transitions? |
| Dec. 6 | Final Exam |