

Ant 301: Introduction to Physical Anthropology

Lecture: MW 9-10AM, JGB 2.324

Laboratories (see your course schedule): SAC 5.172

(Unique Nos. are keyed to lab times: 31035, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85)

COURSE INSTRUCTORS**Professor:** John Kappelman (jkappelman@austin.utexas.edu)

Office: SAC 5.160 Office telephone: 471-0055

Office hours: M, W 12-1 pm or by appointment

Teaching Assistants:Amber Heard-Booth (amber.heardbooth@gmail.com)

Office: SAC 5.130

Office hours: W 10-12PM or by appointment

Labs: M 10-12PM, M 1-3PM

Kelsey Ellis (kelseyellis@utexas.edu)

Office: SAC 5.162

Office hours: TH 1-3PM or by appointment

Labs: T 2-4PM, T 4-6PM, F 10-12PM

Rick Smith (rickwasmith@gmail.com)

Office: SAC 4.166

Office hours: W 3-5PM or by appointment

Labs: M 3-5PM, M 5-7PM, W 1-3PM

Lina Valencia (linavalencia85@gmail.com)

Office: SAC 5.612

Office hours: W 1-3PM or by appointment

Labs: W 3-5PM, W 5-7PM, F 8-10AM

INTRODUCTION

Why are humans unique in so many features; in having culture and language; in being bipedal; in the way we gather our food, and its extraordinary range; in our social and sexual behavior and its variability? This course examines patterns of anatomical, behavioral, and genetic similarities and differences among living primates and humans, and the evidence for human evolution as reconstructed from the fossil record. We will study a wide range of evidence from the natural and social sciences in order to understand current and past anatomical and behavioral adaptations, and to view humans and our ancestors as members of diverse animal and plant communities. The study of physical anthropology is eclectic and requires many kinds of knowledge. Our goal is to understand the place of humans in the world.

Following an introductory overview, lectures discuss the living primates, significant human behavioral and biological adaptations, and evolutionary theory. The aim here is to clarify the scientific procedures and principles, based on the present, which are necessary to understanding the evolution of uniquely human features.

The second part of the course presents the genetic, fossil, and archeological evidence for human evolution and offers a behavioral dimension and explanation for these data. The main topics of this part of the course include hominin origins, the appearance of the first large-brained toolmaker, and the evolution of modern humans.

Laboratories are an integral part of the course and are designed to closely follow the lecture schedule.

PREREQUISITES

This is an introductory course and there are no prerequisites. Lectures and laboratories will cover the basic concepts that are required to understand the material. A science background is not necessary for the successful completion of the course.

WEBSITES

The course website: <https://courses.utexas.edu>

To use the course Blackboard site, go to the above URL. Here you will select the login button located in the upper left portion of the screen. Once you have logged in, you will see all of your classes listed, and you simply click on ANT 301 to access the course page.

To access the Blackboard website, students must have and use their UTEID number and password. To access your UTEID, go to https://utdirect.utexas.edu/nlogin/eid_suite/general/index.WBX.

Other websites that you will find useful include in the study of the course materials:

The primate skeleton: www.eSkeletons.org

The famous fossil Lucy: www.eLucy.org

The human fossil record: www.eFossils.org

REQUIRED MATERIALS

Jurmain R et al. 2008. *Introduction to Physical Anthropology, 11th edition.*

Kappelman J. 2007. *Virtual Laboratories for Physical Anthropology*, version 4.0.

Other course materials will be available on the course website (listed above).

The reading assignments are listed on the lecture schedule that follows. We suggest that you skim the textbook and the *Virtual Labs* during the first week of the semester in order to acquaint yourself with the format and the direction of the course.

AREA CREDIT: Area B or C

LEARNING GOALS

- Understand the biology, ecology and behavior of living primate species, including humans.
- Understand the application of the scientific method (*i.e.* how to construct and test a hypothesis).
- Understand the theory of evolution at both the molecular and organismic levels.
- Understand the nature of the fossil record and geologic context of fossils.
- Understand the evidence for primate and human evolution.
- Understand how to reconstruct the biology, ecology and behavior of extinct humans.

GRADING

The final grade will consist of the following:

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| • Examination #1 (computer-based exam and short take-home essay) | 20% |
| • Examination #2 (take-home essay exam or project) | 20% |
| • Examination #3 (computer-based exam and short take-home essay) | 20% |
| • Laboratory problem sets* | 40% |

*Includes a combination of problem sets, small group assignments, and class participation.

The exact format of each exam will vary, but the computer-based exam will usually include identifications and multiple-choice questions, and there will also be a short take-home, open book essay. The computer-based exams are completed during your regular laboratory time.

LECTURE AND EXAM SCHEDULE

Jan. 18 W Course introduction

No laboratories this week!

Jan. 23 M Introduction: The study of physical anthropology and some principals and perspectives.

Jan. 25 W Non-human primates: ecology and behavior, structural correlates.

No laboratories this week!

Jan. 30 M Non-human primates: continued...

Feb. 1 W Humans as primates: modern humans before the food production “revolution”, ecology and behavior.

Laboratory 1: The Scientific Method and Skeletal Anatomy

Feb. 6 M Humans as primates: continued...

Feb. 8 W Microevolution: DNA, individuals, species; genotype, phenotype; natural selection, fitness, adaptation, exaptation.

Laboratory 2: Taxonomy and Cladistics

Feb. 13 M Microevolution: continued...

Feb. 15 W Macroevolution: time scales; speciation, extinction; tempo & mode; competition; taxonomy, homology & homoplasy; phylogenetics.

Laboratory 3: Genetics

Feb. 20 M Macroevolution: continued...

Feb. 22 W Macroevolution: continued...

Laboratory 4: Primate Behavior

Feb. 27 M Mates, food, and protection: female and male reproductive strategies.

Feb. 29 W Human behavioral variation.

Examination #1 available during your scheduled lab times. No laboratories this week!

Mar. 3 Explore UT (Saturday, 11-5 pm): Volunteers Welcome!

Mar. 5 M Human behavioral variation: continued...

Mar. 7 W Human biological variation.

Laboratory 5: Functional Morphology

Mar. 12 – 16 NO CLASS – SPRING BREAK

Mar. 19 M The history of the Universe, the Milky Way Galaxy, Earth, and everything!

Mar. 21 W The fossil record: fossils; geologic time; reconstructing the past.

Laboratory 6: Primate Diets

Mar. 26 M Primate Evolution: history and phylogenetics.

Mar. 28 W Hominoid Evolution: *Proconsul*, *Dryopithecus*, *Sivapithecus*; phylogenetics; behavioral reconstructions.

Laboratory 7: Primate Evolution

Apr. 2 M Molecular phylogenies: phylogenetic reconstruction and molecular clocks; molecules, morphology, and hominoid evolution.

Apr. 4 W Hominin Origins: context and history of discovery.

Laboratory 8: Fossil Hominins of the Genus Australopithecus

No laboratories this week!

Apr. 9 M The Australopithecines: a unique way of life.

Apr. 11 W NO CLASS – AAPA Meetings

Examination #2 (take-home) available Monday at 9 AM from course website. Essay or project must be submitted no later than Monday, April 16 at midnight. Team projects encouraged!

Apr. 16 M Archaic *Homo*: *H. habilis*, *H. erectus*, Neanderthals, fossil and archaeological records; perspectives, reconstructions, transistions.

Apr. 18 W Hominin brain evolution: body size-brain size; brain structure; communication.

Laboratory 9: Fossil Hominins of the Genus Homo

Apr. 23 M Modern humans: origins, reconstructions, transitions.

Apr. 25 W Language evolution

Laboratory 10: Behavior of Middle and Upper Pleistocene Homo sapiens

Apr. 30 M Cultural change and diversity in modern humans: emergence of modern human social, communicative, cultural and subsistence behavior; diversity of material culture; food production vs. hunting and gathering.

May 2 W The future of humans on planet Earth.

Examination #3 available during your scheduled lab times.

ONLINE MATERIALS

All laboratory materials are accessible via the *Assignments* links on-line through Blackboard at <https://courses.utexas.edu>

You are **required** to download and **print** out lab materials and bring them to lab. You should complete the lab readings *before* the lab meeting so that you are prepared for the lab.

LABORATORIES

You must attend your lab section. If you have an excused absence from lab due to sickness or another legitimate excuse (e.g. sanctioned University event), contact your TA and provide the appropriate documentation (e.g. doctor's note). If possible, contact your TA during the week of the missed lab so that you can receive permission to attend another lab section. To secure an alternate time, you must contact your TA.

CLASSROOM PROTOCOL

Cell phone must be turned off prior to the beginning of lecture and lab. Please do not sleep, talk, or read the newspaper in class.

ACADEMIC HONESTY

The University of Texas at Austin's *Standard of Student Conduct* requires its students to maintain absolute integrity and a high standard of individual honor in scholastic work and to observe standards of conduct appropriate for a community of scholars. Students who cheat not only cheat themselves but also cheat other students in the course and the University. This course has a zero tolerance policy for cheating. Any student found cheating will be directed to the appropriate University authorities. To review the UT policy, see <https://deanofstudents.utexas.edu/sjs/>.

In accordance with these principals, any student found cheating on an exam or laboratory assignment will receive a grade of zero and will be referred to the Dean's office for further disciplinary action.

SPECIAL ACCOMODATIONS

If you require special accommodations for exams (e.g., a reduced-distraction environment or extra time, etc.), you must contact your instructor and teaching assistant in advance in order to discuss the necessary arrangements.

IMPORTANT DATES TO REMEMBER

20 January	Last day of official add/drop period
1 February	Twelfth Class Day
13 February	Last day to DROP course without possible academic penalty
12-16 March	Spring break
2 April	Last day a student may, with dean's approval, withdraw or change pass/fail status