

Introduction to Human Evolution
Anthropology 102 (01:070:102), 6 sections

S. Cachel
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This syllabus can be downloaded from the class Sakai site, accessible via the Rutgers Sakai portal (<http://sakai.rutgers.edu/portal>). Log on using your Rutgers University ID and password. Look under the Resources section of the class site. The file is called “102 syb 2020.”

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Virtual Office hours (Fall Semester): Wednesday, 1-3 P.M., or by appointment.

Graduate Teaching Assistants: The graduate T.A.s are Ms. Emma Willhardt (ew364@anthropology.rutgers.edu) and Ms. Rebecca Decamp (rmd222@scarletmail.rutgers.edu). The graduate T.A.s are in charge of the lab sections. They will give out their virtual office hours and contact information to students during the initial meeting of their lab section.

Format of the Course:

This is an online 4-credit course. The format of the course is Asynchronous Remote (AR). Classes will be online, but not at a set time. Students have 2 classes a week. Each of the 2 class sections consists of an online PowerPoint presentation and a recorded lecture given by the instructor (Cachel). The course material will be placed on the course Sakai site, and will be identified by the class topic for the session. The first session of the week will be put on Sakai on Monday morning; the second session of the week will be put on Sakai on Thursday morning. I will post an announcement on Sakai when the material has been placed on Sakai. When you check your Rutgers email account, you will see this announcement. Students are expected to finish these 2 sessions every week. However, because the format of the course is asynchronous, students can finish these sessions at any time during the week.

Each student is also expected to finish a lab session every week. The lab sessions are run by the graduate T.A.s. A separate lab syllabus will be posted on Sakai, and the lab material will be put in Sakai files separate from the other course material. There will be a separate lab syllabus. The lab syllabus will include a schedule of lab topics and submission of lab assignments. Lab Section (indicated by the last digits on your registration form): the mandatory lab sections meet throughout the week. Your lab section accounts for 1 credit of the 4 course credits. Your T.A. will inform you about the approximate time of your lab section. **The labs will begin during the 2nd week of class (the week of Sept. 7th).**

You must regularly check your Rutgers email account to receive updates on the class, lab sessions, and assignments.

Do not fall behind in the course! You must complete each week's readings, course material, or lab session material by the end of the week. The course material is cumulative, and is based on knowledge of and exposure to prior topics. The vocabulary, terms, and concepts used will change through time. If you skip sessions, or attempt to cram quickly through many sessions, you will have a difficult time, and you may fail the course.

BOX 1

Core Curriculum Learning Goals Met by this Course

II: Areas of Inquiry

- A. Natural Sciences *Students will be able to*
 - e. **Understand and apply basic principles and concepts in the physical or biological sciences.**
 - f. **Explain and be able to assess the relationship among assumptions, method, evidence, arguments, and theory in scientific analysis.**
- B. Social Sciences and History *Students will be able to*
 - i. **Explain and be able to assess the relationship among assumptions, method, evidence, arguments, and theory in social and historical analysis**
- B 1. Historical Analysis *Students will be able to*
 - k. **Explain the development of some aspect of a society or culture over time, including the history of ideas or history of science**

BOX 2

Assessment of Core Curriculum Learning Goals Met by this Course

Achievement of SAS Core curriculum learning goals will be assessed as follows:

Learning goals e, f, i, and k: Questions during lab quizzes will address each of learning goals e, f, i, and k. The instructor and T.A.s will grade these questions according to a rubric.

Course Description: This course is an introduction to the fundamentals of those sciences that contribute to the study of human evolution—evolutionary processes, genetics, geology, climatology, paleontology, primatology, physical anthropology, and archaeology. It is also an introduction to the major human fossil finds, describing the finds, and indicating how these finds were discovered, dated, and interpreted. Students will be introduced to methods of reconstructing ancient human anatomy and behavior, using comparative anatomy, comparative animal behavior, behavioral ecology, and archaeological evidence.

Course Goals and Objectives: Students will learn what characterizes science as a way of interpreting the world. They will be introduced to evolutionary processes, including natural selection and sexual selection, and basic human genetics. They will be introduced to mammal

anatomy and behavior, especially primate anatomy and behavior. They will be introduced to the fundamentals of the study of ancient humans (paleoanthropology), and their environment (paleoecology and dating techniques). Students will be introduced to the strategic use of various lines of evidence (paleontology, geology, archaeology, etc.) needed to reconstruct ancient human anatomy and behavior. Fundamental knowledge of mammalian osteology, dentition, and locomotion will be gained through study of human and mammal bones, joints, and teeth.

Required Text:

The Rutgers University Bookstore in New Brunswick is currently closed because of COVID-19 precautions. The textbook (a student looseleaf edition) can be bought new or used or rented from www.amazon.com.

Robert Jurmain et al. 2017 edition. (15th edition) *Introduction to Physical Anthropology*, New York: Cengage Publishing (student looseleaf version)
ISBN 978-1-337-09982-0.

You must get the 2017 edition (15th edition), which is the latest edition.

Other Class Material:

Lab assignments, review sheets, class announcements, etc. can be accessed from the class Sakai site. Enter this site via the Rutgers Sakai portal (<http://sakai.rutgers.edu/portal>). Log on using your Rutgers University Net ID and password. **You must regularly check your Rutgers University e-mail account to receive announcements.**

Course Requirements:

Two exams each account for 30% of the final grade (60% of the total grade). The second exam is not cumulative. We will not consider giving a make-up exam, unless we are first contacted about your difficulties **before** the class exam. This is also true for lab quizzes and lab assignments. Lab quizzes and exercises account for 25% of the final grade. Three 2-page précis of three videos (5% each) account for 15% of the final grade. Guidance on how to write an acceptable video précis will be given in your lab section. Some lecture material is interpretive, or else presents and discusses the latest discoveries. This material is not in the textbook, but it **will** be covered in the exams. The labs are **not** optional. Material covered in the videos and exercises conducted in the labs will be covered in the exams.

Attendance Policy: Students are expected to finish all work every week. If you miss classes, you must use the Rutgers University absence reporting website to indicate the date and reason for your absence. An e-mail is then automatically sent out to instructors. The URL for this website is <https://sims.rutgers.edu/ssra/>. In cases where students miss coursework for periods longer than a week, this website will automatically direct them to consult a Dean of Students for

assistance, who will help to verify the circumstances of their absence. If students do not finish class or lab material for long periods without a verified cause, the Dean's Office may direct the Rutgers Police to conduct a "Wellness Check." Note: Only health, accident, and family issues are valid reasons for missing coursework.

Scholarship: The Rutgers School of Arts and Sciences mandates that instructors immediately report all cases of suspected plagiarism and cheating to the Academic Deans.

Lab Schedule: Labs begin during the second week of classes (week of September 7th). A lab schedule will be available during the second week, and will be posted on the class Sakai site.

No lab sections meet during the first week of class!

Course Schedule (lecture topics) and Readings: Readings in Jurmain et al. are listed after the lecture topic.

Week of Tuesday, September 1 (beginning of classes)

Introductory

What is Physical Anthropology? What is Paleoanthropology?
Science as a Way of Thinking

Week of Tuesday, September 8

The Discovery of Human Antiquity
Jurmain et al., Chapter 1

Week of September 14

Natural Selection & Adaptation
Ch. 2

Other Evolutionary Processes; The Origin of New Species (Speciation)
Ch. 3

Week of September 21

Chromosomes & DNA Structure
Ch. 3

Genes & Mutations
Ch. 4

Week of September 28

Hereditary Processes
Ch. 4

Mechanisms that Produce Variation; Populations
Ch. 14

Week of October 5

Classification of Living and Fossil Animals

History of the Vertebrates (Animals with Backbones)
Ch. 5

Week of October 12

Mammal Evolution

Ch. 5

What (If Anything) Is a Primate?

Ch. 6, Appendix A (Atlas of Human Skeletal Anatomy)

Week of October 19

The Living Primates

Ch. 6, Appendix A

Non-Human Primate Evolution

Ch. 8

Week of October 26

Exam 1. Topics from Sept.1 through The Living Primates. Non-human primate evolution on Exam 2.

Video: “Clever Monkeys”

<https://www.imdb.com/title/tt1745378>.

A 2008 PBS movie narrated by Sir David Attenborough.

Take *detailed notes* as you watch the video. Your video précis (worth 5% of the final grade) is due in lab next week. In a 2-page paper, list at least 3 monkey behaviors that potentially illuminate the non-human primate behavioral background for human evolution.

Ch. 7

Week of November 2

Primate Behavior & the Origins of Human Language and Cooperation

Ch. 7, Ch. 16

What Can Primate Socioecology Reveal About Human Evolution?

The Strategy for Conducting Palaeoanthropological Research

Ch. 9

1st video précis due in lab this week

Week of November 9

Human (Hominin) Origins; The Earliest Hominins

Ch. 10

Video: “Becoming Human: First Steps”

2009 Nova PBS movie. Part 1 of a 3 part series

<https://www.pbs.org/wgbh/nova/video/becoming-human-part-1/>

Take *detailed notes* as you watch the video. Your video précis (5% of the final grade) is due in lab next week. In a 2-page paper, list at least 3 anatomical features involving locomotion or the brain that illustrate the the earliest hominin contribution to human evolution.

Ch. 10

Week of November 16

The Australopithecines: The Earliest Undoubted Hominins

Ch. 10

Origins of our own Genus (Genus *Homo*); The Earliest Archaeological Record

(3.4-3.3 mya to 2.6-2.5 mya); Who Made the First Stone Tools, and Why Were They Made?

Ch. 11

2nd video précis due in lab this week

Week of November 23 (only I class this week)

Homo erectus

Ch. 11

Week of November 30

Hominin Dispersal throughout the Old World

Archaic Humans (Pre-Modern Humans in Genus *Homo*);

Ch. 11

Week of December 7

Introducing the Neanderthals; Neanderthals Live!

Ch. 12

Video: “Ebola: The Plague Fighters”

A 1996 Nova PBS movie.

<https://www.youtube.com>.

Take *detailed notes* as you watch the video. Your video précis (5% of the final grade) is due on December 15th (first day of the Final Exam period). In a 2-page paper, list at least 3 features that indicate that modern humans are continuing to evolve.

Exam 2. To take place during the Final Exam period (Dec.15-22). Date and details to be announced.