

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

**S. Cachel
Fall, 2019**

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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>). Look under the Resources section of the class site.

Course Venue:

This is a 4-credit course. Students attend 2 lectures and 1 lab section every week. Lectures: Monday & Thursday 10:55-12:15 P.M., Ruth Adams Building 001 (basement auditorium), Douglass Campus. Lab Section: the mandatory lab sections meet throughout the week. Report for lab according to the time listed for your section number. **The labs will begin during the 2nd week of class (the week of Sept. 9th).** There will be a separate lab syllabus. The lab sections meet in the Biological Sciences Building, Room 302, Douglass Campus. The Biological Sciences Building is across the road from the Ruth Adams Building. Bio 302 is on the 3rd floor at the top of the **left** staircase as you enter the Bio Building.

Instructor: Dr. Susan Cachel

Office: Biological Sciences, Room 203C, Douglass Campus. Use the **left** staircase to the second floor; my office is in the complex of offices immediately to the right of the stairwell.

Office phone: 848-932-9270

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

Graduate Teaching Assistants: The graduate T.A.s are Mr. Alex Pritchard and Ms. Anissa Speakman. The graduate T.A.s are in charge of the lab sections. They will give out their office hours and contact information to students during the initial meeting of their lab section.

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 laboratory study of human and mammal bones, joints, and teeth. Students will examine casts of original human and non-human fossil primates, and original ancient stone tools or replicas of these stone tools.

Required Text:

Robert Jurmain et al. 2017 edition. (15th edition) *Introduction to Physical Anthropology*, New York: Cengage Publishing (student looseleaf version)

If you can purchase a used or cheaper copy of the textbook, this is fine. However, you must buy the 2017 edition (15th edition), which is the latest edition.

The textbook is available from the Rutgers University Bookstore on Somerset Street and College Avenue, in downtown New Brunswick (near the train station).

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:

Three exams each account for 20% of the final grade (60% of the total grade). The second and third exams are not cumulative. We will not consider giving a make-up exam, unless we are first contacted about your absence **before** the class exam. This is also true for lab quizzes and the lab practical exams. Lab participation, quizzes, lab practicals, 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 attend all classes. If you miss one or two 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 classes 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 are absent from class for long periods without a verified cause, the Dean's Office may direct the Rutgers Police to conduct a "Wellness Check." Note: Health, accident, and family issues are valid reasons for missing class; vacations, etc. are not.

Scholarship and Class Etiquette: The Rutgers School of Arts and Sciences mandates that instructors immediately report all cases of suspected plagiarism and cheating to the Academic Deans. Turn off cell phones while in class. Using a laptop for taking notes is all right. Using a laptop to surf the web during class is distracting to other students, and is rude to the instructor. Do not do this. Students should arrive on time for class. Students arriving late for class should try to minimize any noise and disturbance to their fellow students when entering the classroom.

Lab Schedule: Labs begin during the second week of classes (week of September 9th). 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:

September 5	Introductory; What is Physical Anthropology? What is Paleoanthropology?
September 9	The Discovery of Human Antiquity Jurmain et al., Chapter 1
September 12	Natural Selection & Adaptation Ch. 2
September 16	Other Evolutionary Processes; The Origin of New Species (Speciation) Ch. 3
September 19	Chromosomes & DNA Structure Ch. 3
September 23	Genes & Mutations Ch. 4
September 26	Hereditary Processes Ch. 4
September 30	Mechanisms that Produce Variation; Populations Ch. 14
October 3	Exam 1 (in lecture hall) Topics from September 4 through September 30
October 7	Classification of Living and Fossil Animals; History of the Vertebrates (Animals with Backbones) Ch. 5
October 10	Mammal Evolution Ch. 5
October 14	What (If Anything) Is a Primate? Ch. 6, Appendix A (Atlas of Human Skeletal Anatomy)
October 17	The Living Primates Ch. 6, Appendix A
October 21	Non-Human Primate Evolution Ch. 8

- October 24 Video: “Clever Monkeys”
Take *detailed notes* as you watch the video. Your video précis (worth 5% of the final grade) is due in lab next week
Ch. 7
- October 28 Primate Behavior & the Origins of Human Language and Cooperation
Ch. 7, Ch. 16
- October 31 What Can Primate Socioecology Reveal About Human Evolution? The Strategy for Conducting Palaeoanthropological Research
Ch. 9
1st video précis due in lab this week
- November 4 **Exam 2 (in lecture hall)**
Topics from to October 7 through October 31
- November 7 Human (Hominin) Origins; The Earliest Hominins
Ch. 10
- November 11 Video: “Becoming Human: First Steps”
Take *detailed notes* as you watch the video. Your video précis (5% of the final grade) is due in lab next week
Ch. 10
- November 14 The Australopithecines: The Earliest Undoubted Hominins
Ch. 10
- November 18 Origins of our own Genus (Genus *Homo*); The Earliest Archaeological Record (3.4-3.3 mya? 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
- November 21 *Homo erectus*
Ch. 11
- November 25 Hominin Dispersal throughout the Old World; Archaic Humans (Pre-Modern Humans in Genus *Homo*);
Ch. 11
- November 25 Introducing the Neanderthals; Neanderthals Live!
Ch. 12
- November 28 **NO CLASS--THANKSGIVING**

- December 2 **Exam 3 (in lecture hall)**
Topics from November 7 through November 25
- December 5 The Origin & Dispersal of Modern Humans; The Upper Paleolithic Revolution—
A Revolution in Behavior; Increasing Social Complexity
Ch. 13
- December 9 Video: “Ebola: The Plague Fighters”
Take *detailed notes* as you watch the video. Your video précis (5% of the
final grade) is due on Friday, December 14th (first day of the Final Exam period).
Submit it to your T.A. via email.