**Introduction to Human Evolution**  
**Anthropology 102 (01:070:102)**  
S. Cachel  
Fall, 2016

This syllabus can be downloaded from the class Sakai site, accessible via the Rutgers Sakai portal (http://sakai.rutgers.edu/portal). The syllabus is also available from the Website of the Rutgers Department of Anthropology (http://anthro.rutgers.edu/); click on undergraduate program; click on courses; click on 01:070:102 Fall 2016.

**Course Venue:**  
This is a 4-credit course. Students attend 2 lectures and 1 lab section every week. Lectures: Tuesday & Thursday 1:10-2:30 P.M., Scott Hall 123, College Avenue 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. 12th).** There will be a separate lab syllabus. The lab sections meet in the Biological Sciences Building, Room 302, **Douglass Campus.** Bio 302 is 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  
Phone: 848-932-9886 (departmental office)  
e-mail: Cachel@rci.rutgers.edu

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

**Graduate Teaching Assistants:** Mr. Shauhin Alavi (shauhin.alavi@rutgers.edu) and Ms. Brighid McCarthy (brighid.mccarthy@rutgers.edu). The graduate T.A.s will give out their office hours and contact information to students during their initial meeting in lab section.

---

**BOX 1**

**Core Curriculum Learning Goals Met by this Course**

<table>
<thead>
<tr>
<th>II: Areas of Inquiry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Natural Sciences</strong></td>
<td><em>Students will be able to</em></td>
</tr>
<tr>
<td>e. Understand and apply basic principles and concepts in the physical or biological sciences.</td>
<td></td>
</tr>
<tr>
<td>f. Explain and be able to assess the relationship among assumptions, method, evidence, arguments, and theory in scientific analysis.</td>
<td></td>
</tr>
<tr>
<td><strong>B. Social Sciences and History</strong></td>
<td><em>Students will be able to</em></td>
</tr>
<tr>
<td>i. Explain and be able to assess the relationship among assumptions, method, evidence, arguments, and theory in social and historical analysis</td>
<td></td>
</tr>
</tbody>
</table>
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 also is 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:


If you can purchase a used or cheaper copy of the textbook, this is fine. However, you must buy the 2013-2014 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 downloaded 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 absence before the class exam. This is also true for lab quizzes. Lab participation, 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.

**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: One question on the mid-term or final exam 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.

**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/](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 12th). 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 6  Introductory; What is Physical Anthropology? What is Paleoanthropology?

September 8  The Discovery of Human Antiquity
               Ch. 1

September 13 Natural Selection & Adaptation
               Ch. 2

September 15 Other Evolutionary Processes; The Origin of New Species (Speciation)
               Ch. 2

September 20 Chromosomes & DNA Structure
               Ch. 3

September 22 Genes & Mutations
               Ch. 3

September 27 Hereditary Processes
               Ch. 4

September 29 Mechanisms that Produce Variation; Populations
               Ch. 14

October 4   Classification of Living and Fossil Animals; History of the Vertebrates
               (Animals with Backbones)
               Ch. 5

October 6   Mammal Evolution
               Ch. 5

October 11  What (If Anything) Is a Primate?
               Ch. 6, Appendix A

October 13  The Living Primates
               Ch. 6, Appendix A
October 18  Non-Human Primate Evolution  
Ch. 8  

October 20  Exam I (in lecture hall) Topics from September 6 through October 13  

October 25  Video: “Jane Goodall’s Wild Chimpanzees”  
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 27  Primate Behavior & the Origins of Human Language and Cooperation  
Ch. 7, Ch. 16  

November 1  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 3  Human (Hominin) Origins; The Earliest Undoubted Hominins  
Ch. 10  

November 8  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 10  Rutgers 250th Anniversary Celebration  
Guest Lecturer: Dr. Matt Sponheimer, University of Colorado at Boulder  
“Reconstructing the Ecology of Ancient Humans Using the Chemistry of Prehistoric Teeth and Bones”  
Open to the General Public  

November 15  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. 10  
2nd video précis due in lab this week  

November 17  *Homo erectus*  
Ch. 11  

November 22  Hominin Dispersal throughout the Old World  
Ch. 11
November 24  **NO CLASS--THANKSGIVING**

November 29  Archaic Humans (Pre-Modern Humans in Genus *Homo*)  
Ch. 12

December 1  Introducing the Neanderthals; Neanderthals Live!  
Ch. 12

December 6  The Origin & Dispersal of Modern Humans; The Upper Paleolithic  
Revolution—A Revolution in Behavior; Increasing Social Complexity  
Ch. 13

December 8  Ice-Age Art—What Is Its Significance? We Are Still Evolving!  
Ch. 13

December 13  Video: “Ebola: The Plague Fighters”  
Take *detailed notes* as you watch the video. Your video précis (5% of the  
final grade) is due on Thursday, December 15th.  
Ch. 15

**Thursday, December 15th:**  3rd video précis due. Turn this in to your T.A.’s mailbox.

**Monday, December 19th, 12-3 P.M.** Exam II (in lecture hall). Topics from October 18 through December 13