

**SYLLABUS  
SPRING 2020  
Anthropology 102: INTRODUCTION TO HUMAN EVOLUTION  
M W 2:15 am - 3:35 pm, ARH-200**

**HOW THIS SYLLABUS IS ORGANIZED**

The syllabus is meant to be a complete document and *everything* in the syllabus is important. The *most important* things come first. The syllabus also contains links to more detailed descriptions like this one, <http://academicintegrity.rutgers.edu/academic-integrity-policy/>, on academic integrity which is very important.

**Web site:** <https://canvas.rutgers.edu/>

**Email:** [robertsc@scarletmail.rutgers.edu](mailto:robertsc@scarletmail.rutgers.edu)

**Professor:** Dr. Rob Scott

**Web:** [CHES Profile](#)

**Office:** BIO 210

**Office hours:** Tuesday 10:00 am -2:00 pm

**Teaching Assistants:**

Green Group: Sections 01, 02, & 04 Denise Mercado Office: Office hours: Email: <a href="mailto:drm198@scarletmail.rutgers.edu">drm198@scarletmail.rutgers.edu</a>	Orange Group: Sections 05, 06, & 07 Emma Willhardt Office: Office hours: Email: <a href="mailto:ew364@scarletmail.rutgers.edu">ew364@scarletmail.rutgers.edu</a>
Yellow Group: Sections 03, 08, & 09 Andrew Schwartz Office: Office hours: Email: <a href="mailto:afs131@scarletmail.rutgers.edu">afs131@scarletmail.rutgers.edu</a>	

**BOX 1**Core Curriculum Learning Goals Met by this Course**NS:** Natural Sciences

- ✓ Understand and apply basic principles and concepts in the physical or biological sciences.
- ✓ Explain and be able to assess the relationship among assumptions, method, evidence, arguments, and theory in scientific analysis.

**HST:** Historical Analysis

- ✓ Employ historical reasoning to study human endeavors, using appropriate assumptions, methods, evidence, and arguments.
- ✓ Explain the development of some aspect of a society or culture over time.

**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.

**REQUIREMENTS FILLED BY THE COURSE**

The course fills a requirement of the major in Evolutionary Anthropology, the minor in Evolutionary Anthropology, or the minor in Anthropology. Additionally, the course serves as a prerequisite for a Certificate in Evolutionary Medicine.

**ACKNOWLEDGEMENTS**

This course owes a debt to a long list of people - mentors, teachers, colleagues, friends, and students - who have either provided their own course materials and example or contributed to past iterations of this class directly. I am particularly grateful to Deborah Overdorff, John Kappelman, Peter Ungar, Rob Blumenshine, Holly Dunsworth, and Darcy Shapiro.

**REQUIRED TEXTS, MATERIALS, AND SUBSCRIPTIONS**

**The Alternative Introduction to Biological Anthropology** by Jonathan Marks (\$44.95 new).

**Your Inner Fish: A Journey into the 3.5-Billion-Year History of the Human Body** by Neil Shubin (\$16.95 new).

OR

**Seven Skeletons: The Evolution of the World's Most Famous Human Fossils** by Lydia Pyne (\$28.00 new).

(You will be required to read one of these books. There will be a writing assignment on the book you choose which will be half of your Writing Assignment grade.)

There are many excellent videos from EONS (\$0.00 to \$10.00 for subscription) that we will make use of. These are free to view but I ask that if you can afford it you consider supporting them here:

<https://www.patreon.com/eons>. Six months at \$2/month is a total of \$10.

One packet of [Oxford Neon Index Cards, 3" x 5", Ruled, Assorted Colors, 100 Per Pack \(40279\)](#) (\$3.82 new) is also required for class. Index cards are required for in-lecture quizzes.

A [notebook](#) (such as, [Oxford Composition Book, 9 3/4" x 7 1/2", College Rule, Black Marble Cover, 100 Sheets](#) or similar) (\$1.99 new) is also required for class. You will need this to take notes in during lecture because the use of laptops is prohibited during class.

Some other readings and videos will be provided via Canvas in Resources as pdf documents or as links. You will also get weekly emails that discuss the order in which to do the readings, questions to answer in your course notebook, and key terms to look for and define.

***Texts, Materials, and Course Fees Affordability Statement***

This course adheres to a texts and materials affordability policy. Accordingly, the cost of all texts plus other necessary or required materials and any required course fees will not exceed \$100 at new prices. The total cost of texts for this course is currently \$61.90 and the cost of other materials and subscriptions is \$15.81. There a \$7.00 course fee.

*The total texts, materials, and course fees budget for this course is \$84.71.*

**CATALOG DESCRIPTION**

Evolutionary processes, including adaptation and speciation; fossil and archaeological records of human morphological and social-behavioral evolution

**COURSE OBJECTIVES**

- Understand the biology, ecology and behavior of a number of living primate species, including humans.

- Understand the application of the scientific method (*i.e.*, how to construct and test a hypothesis). [\[EA1\]](#)
- Be able to summarize and describe simple quantitative and qualitative observations and react to such observations critically. [\[EA2\]](#)
- Understand the theory of evolution at both the molecular and organismal levels. [\[EA1\]](#)
- Understand the nature of the fossil record and the geologic context of fossils.
- Understand the evidence for primate and human evolution.
- Understand how the biology, ecology and behavior of extinct hominin species are reconstructed.
- Be able to discuss critical events and ongoing issues in human evolution.
- Begin to develop skills needed to be a critical consumer and ultimately user of the primary scientific literature (e.g., access and use Web of Science, critical consumption of online information). [\[EA3\]](#)

### COURSE NARRATIVE

First we will discuss evolutionary anthropology and the study of human evolution. What is the point and why do we care? What do we study and how do we do it? What might be some big questions?

We use scientific method and thinking to explore these questions. What is that and how is it done? What are its strengths and weaknesses?

Observation and theory are critical elements of science. Darwin made many observations and developed our key theory that still structures the discipline. What were Darwin's influences and observations? What were his contributions? What was Darwin's big idea?

Darwin could observe that many characteristics were heritable. However, he had no understanding of the mechanisms of inheritance. These are very important and a great deal of science since Darwin has helped us understand these mechanisms. We will explore the basis and mechanisms of inheritance and understand some things that Darwin never knew!

As characteristics are inherited from parent to child, we also observe changes over time. We call changes like these that happen in populations of organisms over time microevolution. We will discuss the four major ways in which this change – mediated by the mechanisms of inheritance – happens. These include Darwin's big idea, natural selection, as well as mutation, gene flow, and genetic drift. Our understanding of these forces of evolutionary change make up what is referred to as the "modern synthesis."

We can use our understanding of microevolution to explore and explain human biological variation. Thus, we focus on some examples of human variation and the relevance of evolutionary theory to understanding these examples (malaria resistance, lactase persistence, and variation in skin color). We discuss our understanding of humans as a biocultural species and the implications of this idea.

As inheritance from parent to offspring gives way to changes in populations over the course of generations these changes can be magnified over deep geological time leading to speciation (the origin of new species) and adaptive radiation. These changes lead to the diversity of life including our own species and leave us with a great tree of life. We explore macroevolution and how to think in terms of trees. What is a species, how does speciation happen, and what is a phylogeny? What is adaptation? How do we classify life and how can we visualize this using Darwin's metaphor of a great tree?

Next, we turn our attention to the Order Primates. This branch of the tree of life includes our closest relatives and observations about primates can potentially tell us about ourselves and help us develop and test hypotheses about human evolution. In particular, we focus on observations of locomotion, diet and social behavior in primates. How might these aspects of primate biology been shaped by evolutionary forces?

Humans are primates too and have also been shaped by evolutionary forces. We can explain characteristics that all humans share using evolutionary theory. What are some of these characteristics? What are possible key primate and human adaptations? How do primate origins influence humans?

With humans front and center, we turn to the fossil record of human evolution and evaluate the evidence. We start with primate origins, consider our close fossil ape relatives, and lay out a broad framework of our close relatives in the fossil record, the hominins. We consider the evolution of key human adaptations with respect to locomotion, diet, and social behavior (topics that we have already explored among our primate relatives). To these we add observations about encephalization, the use of technology, and globe spanning human migrations including the recent migration into the New World.

At this point, we have a broad picture of what we know about the human journey, some ideas on what being human means, and a sense of the nature and scope of human evolution. With all we have learned in mind, the course concludes with discussion of the fundamentally anti-racist theoretical contributions of evolutionary anthropology.

**GRADING AND ASSESSMENT****BOX 2**Assignment of Grades

Grades will be calculated based on the following:

<u>Assignment, Exercise, or Exam</u>	<u>Percent of Final Grade</u>
Midterm Exam (~100 questions)	~25%
Cumulative Final Exam (~100 questions)	~25%
In-Lecture Quizzes	~10%
Writing Assignments	~15%
Lab Attendance	~10
Lab Assignments and Quizzes	~10
Lab Participation	~5%
<b>TOTAL</b>	<b>100%*</b>

**Point Deductions**

Points will be deducted from your average due to missed classes on the following basis:

- Your regular and timely class attendance is expected.
- For every missed recitation section without a valid excuse (substantiated with written documentation and reported using the Absence Reporting System: <https://sims.rutgers.edu/ssra/>), you will lose 2 points. If you have more than 2 unexcused absences you should see the Dean of Students. Late arrival or early departure, without prior permission from your TA is considered an unexcused absence. You may not make up missed in-class writing assignments due to an unexcused absence.

**Extra Credit**

You may earn 2 points of extra credit by attending an additional outside University-sponsored lecture approved by your TA and writing a one paragraph thesis and significance statement. [PENDING FUNDING: You may earn another 2 points of extra credit when you participate in the scavenger hunt activity at during the field trip to the American Museum of Natural History.] Finally, you may earn up to 2 points of extra credit for the activities in the reading assignment "*Homo naledi* – A case study in understanding and evaluating hypotheses about hominin evolution" by D. Shapiro.

Students are often interested in the questions "How will my grade be assigned?" and "What will be on the test?" The answer to both of these questions relates to the Course Objectives (see above) and the Rutgers SAS Core Curriculum Learning Goals fulfilled by this course. Your grade will be higher if course assignments show your achievement of Course Objectives and Core Curriculum Learning Goals is higher. All exam questions and writing assignments are explicitly tied to one or more learning goals.

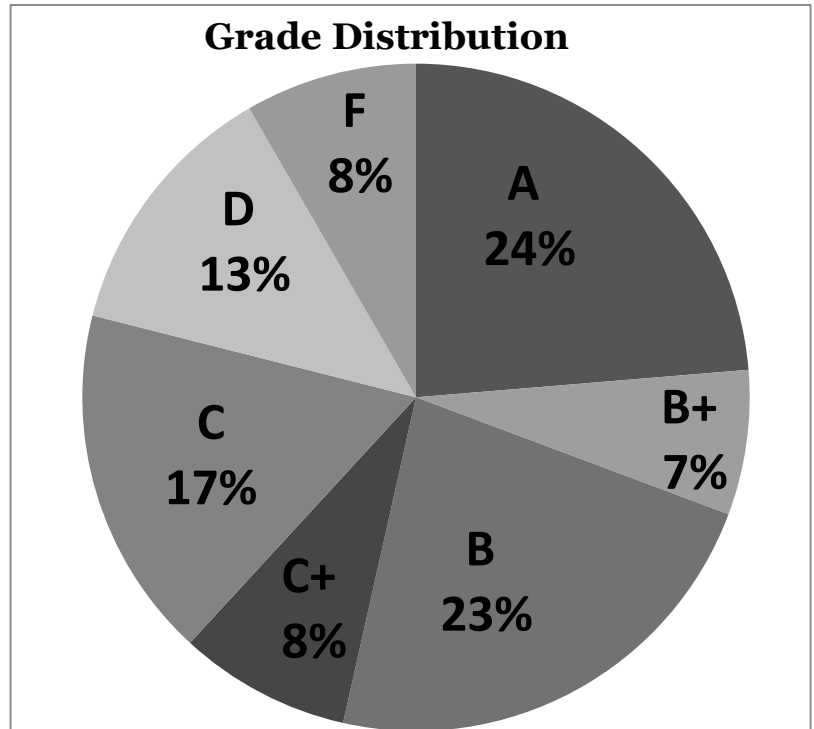
Final grades are assigned at or just slightly below the standard Rutgers cut-offs (90%, 85%, 80%, 75%, 70% and 60%). There is no "curve" or "rounding-up." Requests for higher grades after grades have been assigned are denied except in the case of genuine errors in assigning of grades.

In some cases, students may have cause to quibble about issues and some random noise creeps into grades. These issues are dealt with and remedied on a course-wide basis. Indeed, remedies are already built into the syllabus: the outside lecture extra credit option already exists and exams include some extra credit questions. Other remedies could include dropping the lowest quiz grade or setting grade cut-offs just slightly below the standard Rutgers cut-offs.

The pie chart at the right is the final distribution of grades in this course previously. The 8% of students who received Fs were nearly universally students who simply did not turn in work, come to exams, take quizzes, or show up to recitation. It is very easy to avoid falling in that 8%.

Two other important points can be drawn from this data:

1. More than half of the class will likely earn a B or better.
2. Of those who 'show up' – more than one in five will likely earn an A.



### **BOX 3**

#### Assessment of Core Curriculum Learning Goals Met by this Course

Learning Goals can be assessed because writing assignments and exam questions are linked and built around at least one learning goal. The overall degree to which this course achieves the core curriculum learning goals will be determined using evaluative rubrics applied to a selected writing assignment (describe-and-explain essay).

## **GRADED COURSE WORK**

### **Exams**

There will be two exams, a midterm and final, which will test students' substantive knowledge of the class material including lectures (both inside and outside of class), films, and readings. To pass the course both exams must be taken. The final will be cumulative in that the second part of the course builds on the first part.

Exam questions will be a mix of multiple choice, short answer, long answer questions.

### **Laboratory Section (Assignments, Quizzes, Attendance, Participation)**

*No lab sections meet during the first week of class! Labs begin January 27!*

Active participation in weekly laboratory sections, supervised by teaching assistants, is **mandatory**. Your participation grade (~5% of final grade) will be based on your **active** and **informed** participation in class discussions and activities. Attendance is separate from participation. Attendance will be recorded and is 10% of your grade.

Periodic in-lab quizzes and assignments will count for 10% of your grade and will be assigned zero grades in cases of unexcused absence from lab.

*Schedule:* Labs begin during the second week of classes.

### Writing Assignments

Two short writing assignments will be submitted on Canvas added and graded by your TA. Writing assignment grades will contribute ~15% to your final grade. The writing assignments will be:

1. A **book review and report** of *Your Inner Fish* by Neil Shubin OR *Seven Skeletons* by Lydia Pyne (2 pages).
2. A **describe-and-explain essay** on a selected topic related to one of the Core Curriculum Learning Goals fulfilled by this class. (3 pages)!

*All writing assignments must be formatted with double-spaced 12 pt Times New Roman font and 1 inch margins. Punctuation must also have the same formatting.*

*Writing assignments are due electronically on Canvas to your TA no later than NOON on the Friday of the week in which they are due.*

*DO NOT PLAGIARIZE.* Turn-It-In is used on each writing assignment and identifies cases of suspected plagiarism which will be investigated. *The University [Academic Integrity Policy](#) will be enforced.*

More details on the writing assignments will be made available on <https://canvas.rutgers.edu/> and in lab section.

### In-Lecture Quizzes

You will only succeed in this course if you come to lecture and recitation, pay attention and participate in class, and prepare for class. Short quizzes will be given in lecture and will cover previous lectures and required readings.

### Extra Credit

You may earn 2 points of extra credit toward your final grade by attending an additional outside University-sponsored lecture approved by your TA and writing a one paragraph summary statement about the lecture. The statement will be submitted on Canvas and run through Turn-It-In. Plagiarism is still plagiarism even if it involves extra credit and the penalties are the same.

[PENDING FUNDING: You may earn another 2 points of extra credit when you participate in the scavenger hunt activity at during the field trip to the American Museum of Natural History.]

You may earn up to 4 points of extra credits for the activities in the reading assignment “*Homo naledi* – A case study in understanding and evaluating hypotheses about hominin evolution” by D. Shapiro.

### ABOUT EMAILING ME

*I want to interact with you face-to-face as much as possible and I urge you all to visit me in my office hours on Tuesdays between 10:00 am and 2:00 pm. If you wish to ask about your grade, what it is or how to improve it or to ask me how to study, these issues are best discussed in person. If you cannot make it during my regular office hours, please email me to make an appointment to talk to me. In your message, please include specific days and times that work for your schedule that I can choose from.*

*You do not need to email me to let me know you're coming to my office hours. Although some professors might instruct otherwise, you don't need to email me to let me know you are going to miss a class. If you do miss a class and you want to discuss the material you missed, you should come to my office hours. Assignments should be submitted on Canvas and not as email attachments.*

*When you have questions, please check the syllabus first before emailing me. If you can't find the answer on the syllabus, visit me in person or email me telling me exactly what you did find on the syllabus related to your question before posing your question. – Prof. Scott*

## COURSE POLICIES

### Laptop Policy

Laptop use during lecture is prohibited. You will need a notebook for recording notes during lecture. The reason for this policy is because laptop use is linked both to use of the internet during class and to lower test scores.

### Academic Integrity

All students must strictly adhere to the Rutgers Academic Integrity Policy, which identifies and defines violations including cheating, fabrication, facilitating academic dishonesty, plagiarism, and denying others access to information or material. Full definitions of each of these violations, as well as the consequences of violating the Academic Integrity Policy, are available as part of the student handbook. For details see: <http://academicintegrity.rutgers.edu/academic-integrity-policy/>.

*You are responsible for knowing what constitutes plagiarism and academic dishonesty.*

### Rieger's Rule

Sometimes things happen in our lives that get in the way class. They can be things like a death in the family or some other tragedy or perhaps just finding yourself completely overwhelmed. As an undergraduate student, I once asked an academic Dean to write a note to excuse me from an exam - I was getting sick and was really stressed out. She denied my request. But, very kindly, at the end of our meeting announced "As far as I am concern every student is allowed to sleep through one exam." The message was that if at the end of the day I needed to miss the exam that was ok. This seems like something that won't cause any harm. Thus, in this class, each student is allowed invoke Dean Rieger's rule one time. This means one free extension on a paper or exam will be granted if you ask for it. Please let us know in a timely fashion if you need to use this accommodation. You don't need to give us a specific reason (just say I need to sleep through this exam or I need to use Rieger's rule). A timely make-up or new due date will have to be arranged. Ideally, it is best not to have to take advantage of this policy, so please, only use this option if it is something you need.

### Unusual and Extenuating Circumstances (aka "please consult a Dean of Students")

Some students may encounter some form of unusual or extenuating circumstances that may affect them as students and using the Rieger's rule may not be enough. The course policy is to help and accommodate such circumstances as appropriate. However, the TAs and I do not have sufficient qualifications or time to investigate and adjudicate such circumstances. Therefore, in all cases, when *unusual and extenuating circumstances* occur students are strongly encouraged to see a Dean of Students. A Dean of Students may suggest in writing any accommodations that might be appropriate and these may or may not be offered. With respect to *unusual and extenuating circumstances*, a key principle that will guide resolution is how early the student sought help from a Dean of Students. Thus, as soon as possible after an extreme issue arises, please consult a Dean of Students.

What are unusual and extenuating circumstances? These include things like:

- major disturbances caused by a death in the family or a similar loss
- chronic health problems
- extreme emotional or psychological distress
- mandatory court appearances
- the loss of home or means of support

### On Dogs and Babies

It is important that lecture be a largely distraction free environment. This is why the course policy prohibits laptops and cellphones for example and students should arrive on time to class. However, this is also a class where we presume that everyone can behave responsibly with tolerance and restraint. Service dogs are permitted. Service dogs in training (such as Seeing Eye Puppy club dogs) are also permitted. Please just let Prof. Scott know by email if you will be bringing a service dog to class.

Some students are also parents and child care arrangements can and do fall through. When that happens, your baby or small child is welcome in lecture. Just provide them with a quiet activity and sit near an exit. If a baby cries or there is another



issue, you can simply slip out that nearby exit for as long as needed. If rabbis and pastors can tolerate an occasional crying baby in church or temple then professors and college students should certainly be capable of the same.

### Attendance

You are required to attend all class meetings (lecture and lab). If you expect to miss one or two lectures or one recitation section, please use the University absence reporting website <https://sims.rutgers.edu/ssra/> to indicate the date and reason for your absence. An email is automatically sent to me. **Do not email me about absences outside of this system.** If you expect to miss more than two lectures or more than one recitation section, you must see the Dean of Students who will verify any special circumstances. If you have reported two or more absences and expect another, use the Absence Reporting System and also make an appointment with the Dean of Students. This class operates according to the **notify and document principle**. What this means is that you must **notify** the appropriate person or persons (Prof. Scott and/or TA) of any circumstance which could require some special permission. In the case of absences, notification must be via the University-wide Absence Reporting System (<https://sims.rutgers.edu/ssra/>) prior to the absence and **documentation** may be requested after the absence. Please note that notification of the absence must be **prior to the absence and retroactive notifications are not acceptable**.

### Late Work

Writing assignments are due electronically on Canvas to your TA no later than **noon** on the Friday of the week in which they are due. No late papers will be accepted except under very unusual circumstances or in the case of a student invoking Rieger's rule. The occurrence of such unusual circumstances must be brought to the attention of both Prof. Scott and your TA within **48 hours** of the missed deadline (email us both). If lateness of work also involves absence from class you must also use the Absence Reporting System (<https://sims.rutgers.edu/ssra/>). Although submission of writing assignments may be allowed by the Canvas system after the deadline, this does not mean late submissions will be graded. You are responsible for confirming all electronic submissions on Canvas.

### Lateness

Please come to class on time – it is very disruptive to professor and classmates when students arrive late to class.

### Exams

No make-up exams will be given except under very unusual circumstances and with a valid excuse or in the case of a student invoking Rieger's rule. Since a missed exam also involves a missed class period, you must use the Absence Reporting System (<https://sims.rutgers.edu/ssra/>) to provide notification of any special circumstances. In addition, contact us (your TA and Prof. Scott) by email within 48 hours of any missed exam. On exam days, you are **required** to bring **your student ID** and a **pencil**. NO CHEATING will be tolerated, and anyone found cheating will receive an "F" grade for the exam.

### Courtesy

You are expected to act with courtesy in lecture and recitation. This includes:

- All cell phones must be turned off (**no texting**)
- Address Prof. Scott as "Professor Scott or Dr. Scott" (not as "Professor") and address guest lecturers by the appropriate **title** and **name**
- Learn your TA's name and address them accordingly
- Behave respectfully to instructors and other students
- No social media during class
- No playing games or cards
- No headphones or listening to music
- Be prepared to discuss
- No reading the newspaper or other non-course material
- Be polite to instructors and other students
- No use of audio or video recording devices

### Religious Holidays

The University attendance and religious holiday policy can be found at <https://scheduling.rutgers.edu/scheduling/religious-holiday-policy>

An interfaith calendar can be found at <http://www.interfaith-calendar.org/2020.htm>

**Accommodation Policy**

Students with disabilities requesting accommodations must follow the procedures outlined at <https://ods.rutgers.edu/students/registration-form>.

Full disability policies and procedures are at <https://ods.rutgers.edu/>

**Final Exam**

The final exam is scheduled for May 13, 2020 from 12:00 pm to 3:00 pm.

**LINKS TO STUDENT SUPPORT SERVICES**

Counseling Services (including CAPS): <http://health.rutgers.edu/medical-counseling-services/counseling/>

(848) 932-7884

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

**Violence Prevention & Victim Assistance (VPVA):** [www.vpva.rutgers.edu/](http://www.vpva.rutgers.edu/)

**(848) 932-1181**

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

**Support for Undocumented Students:** <http://deanofstudents.rutgers.edu/student-advocacy/information-support-undocumented-students/>

**Lecture Schedule, Lab Schedule, and Readings**

AIBA = Alternative Introduction to Biological Anthropology

Required readings, videos, animations, interactives, and other resources other than *Your Inner Fish*, *Seven Skeletons*, or *Alternative Introduction to Biological Anthropology* can be found in Resources on Canvas (<https://canvas.rutgers.edu/>) and/or by following the links below.

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#	Day of the Week	Month	Day	Lecture	Lab Section	Reading
1	W	Jan	22	Introduction: evolutionary anthropology		AIBA Ch. 1
2	M	Jan	27	How to do science	1. Scientific Method & Evolution by Natural Selection	AIBA Ch. 2 “ <a href="#">10 Scientific Ideas That Scientists Wish You Would Stop Misusing</a> ” compiled by A. Newitz “How Science Works” at <a href="http://undsci.berkeley.edu/article/howscienceworks_01">http://undsci.berkeley.edu/article/howscienceworks_01</a> Daily Double Musical Break at <a href="https://www.youtube.com/watch?v=Y6ljFaKRTI">https://www.youtube.com/watch?v=Y6ljFaKRTI</a> I AND <a href="https://www.youtube.com/watch?v=9kf51FpBuXQ">https://www.youtube.com/watch?v=9kf51FpBuXQ</a>
3	W	Jan	29	Evolution and Darwin		AIBA Ch. 3 “The History of Evolutionary Thought: Pre 1800” at <a href="http://evolution.berkeley.edu/evolibrary/article/0_0_0/history_01">http://evolution.berkeley.edu/evolibrary/article/0_0_0/history_01</a> “The History of Evolutionary Thought: 1800s (up to Natural selection)” at <a href="http://evolution.berkeley.edu/evolibrary/article/0_0_0/history_index_02">http://evolution.berkeley.edu/evolibrary/article/0_0_0/history_index_02</a> Video: “The Making of a Theory: Darwin, Wallace, and Natural Selection” at <a href="https://www.youtube.com/watch?v=XOiUZ3ycZwU">https://www.youtube.com/watch?v=XOiUZ3ycZwU</a> “Darwin on the Origin of Species” by Asa Gray EONS Video: “How Evolution Works (And How We Figured It Out)” at <a href="https://www.youtube.com/watch?v=dyiZaHIRM6w">https://www.youtube.com/watch?v=dyiZaHIRM6w</a>
4	M	Feb	3	Inheritance: Beginning to Understand the Mechanisms of Heritability	2. DNA Replication & Protein Synthesis	“Gregor Mendel and the Principles of Inheritance” by I. Miko “Mendelian Genetics Patterns of Inheritance and Single-Gene Disorders” by H. Chial “Genetic Dominance: Genotype-Phenotype Relationships” by I. Miko “Developing the Chromosome Theory” by C. O’Connor “Thomas Hunt Morgan, Genetic Recombination, and Gene Mapping” by I. Lobo

						<p>Musical Break (a recombination and crossing over theme song) at <a href="https://www.youtube.com/watch?v=AjPau5QYtYs">https://www.youtube.com/watch?v=AjPau5QYtYs</a></p>
5	W	Feb	5	Inheritance: Proteins, DNA, and RNA		<p>“Resource - DNA Structure and Organization”</p> <p>“Resource - DNA Replication and Protein Synthesis”</p> <p>“RNA Functions” by S. Clancy</p> <p>“Discovery and Types of Genetic Linkage” by I. Lobo and K. Shaw</p> <p>“Chromosome 11 Flyover” at <a href="https://www.dnalc.org/resources/3d/chr11.html">https://www.dnalc.org/resources/3d/chr11.html</a></p> <p>“What is a Gene? Colinearity and Transcription Units” by L. Pray</p>
6	M	Feb	10	Inheritance: Pleiotropic, Polygenic, and Omnigenic		<p>AIBA Ch. 4</p> <p>“Things Genes Can’t Do” by A. Buchanan and K. Weiss</p> <p>“Polygenic Inheritance and Gene Mapping” by H. Chial</p> <p>“Pleiotropy: One Gene Can effect Multiple Traits” by I. Lobo</p> <p>“Theory Suggests That All Genes Affect Every Complex Trait” by V. Greenwood</p>
7	W	Feb	12	Inheritance: Epigenetics and Environmental Influences on Gene Expression	3. Polygenic Inheritance of Height	<p>Video: “Why Women Are Stripty” from Veritasium at <a href="https://www.youtube.com/watch?v=BD6h-wDj7bw">https://www.youtube.com/watch?v=BD6h-wDj7bw</a></p> <p>Video: “The Epigenome at a Glance” at <a href="http://learn.genetics.utah.edu/content/epigenetics/intro/">http://learn.genetics.utah.edu/content/epigenetics/intro/</a></p> <p>“Activity - Change the Shape of the Gene”</p> <p>“Phenotype Variability: Penetrance and Expressivity” by I. Miko</p> <p>“Environmental Influences and Gene Expression” by I. Lobo</p>
8	M	Feb	17	Microevolution: Mutation and gene flow		<p>AIBA Ch. 5</p> <p>Video: “Evolution” at <a href="https://www.youtube.com/watch?v=XdddbYILeI0">https://www.youtube.com/watch?v=XdddbYILeI0</a></p> <p>“The Hardy-Weinberg Principle” by C. A. Andrews</p> <p>“Mutations Are the Raw Materials of Evolution” by J. L. Carlin</p> <p>Video: “The Origins of Human Color Vision” at <a href="https://www.youtube.com/watch?v=1zw2RE-PavQ">https://www.youtube.com/watch?v=1zw2RE-PavQ</a></p> <p>“Resource – Gene Flow” by R. S. Scott &amp; D. Shapiro</p>
9	W	Feb	19	Microevolution: Genetic drift and natural selection	4. Mendelian Inheritance and Hardy-Weinberg II	<p>AIBA Ch. 5</p> <p>Video: “Genetic Drift: Founder Effect and Bottleneck Explained” at <a href="https://www.youtube.com/watch?v=-UfrN11V9SM">https://www.youtube.com/watch?v=-UfrN11V9SM</a></p> <p>Video: “Galapagos Finch Evolution” at <a href="https://www.youtube.com/watch?v=mcM23M-CCog">https://www.youtube.com/watch?v=mcM23M-CCog</a></p> <p>Video: “Moth Mimicry: Using Ultrasound to Avoid Bats” at</p>

						<a href="https://www.youtube.com/watch?v=NeCmSL_N65A">https://www.youtube.com/watch?v=NeCmSL_N65A</a> “Sexual Selection” by P. L. R. Brennan “Neutral Theory: The Null Hypothesis of Molecular Evolution” by L Duret
10	M	Feb	24	Modern human variation & adaptation: Single-gene disorders, lactase persistence, malaria resistance height, IQ, behavior genetics, and skin color		“Case Closed: Famous Royals Suffered From Hemophilia” from Science Magazine at <a href="http://www.sciencemag.org/news/2009/10/case-closed-famous-royals-suffered-hemophilia">http://www.sciencemag.org/news/2009/10/case-closed-famous-royals-suffered-hemophilia</a> “Huntington's Disease: The Discovery of the Huntington Gene” by H. Chial Video: “The Evolution of Lactose Tolerance” at <a href="https://www.youtube.com/watch?v=MA9boI1qTuk">https://www.youtube.com/watch?v=MA9boI1qTuk</a> “Digestive Enzymes of Human and Nonhuman Primates” by M. Janiak Video: “The Biology of Skin Color” OR read “Human skin pigmentation as an example of adaptive evolution” by N. Jablonski Video: “Malaria and Sickle Cell Anemia” “Natural Selection: Uncovering Mechanisms of Evolutionary Adaptation to Infectious Disease” by C. Pardis and M. D. Sabeti “Three Laws of Behavior Genetics and What They Mean” by E. Turkheimer “Heredity Is Only Half the Story” by K. P. Harden Musical Break: <a href="https://www.youtube.com/watch?v=yVK3tTBJze4">https://www.youtube.com/watch?v=yVK3tTBJze4</a> “Still Evolving After All These Years” by J. Hawks “Will Humans Survive?” by J. Scalzi
11	W	Feb	26	Race, racism, genetic determinism, and eugenics	5. All The Skulls!	Video: “What Is Race?” Video: “Here’s Why White Supremacists Are Chugging Milk” at <a href="https://www.vox.com/science-and-health/2018/10/19/17999994/stephen-colbert-skewers-white-supremacists-milk-chugging-new-york-times">https://www.vox.com/science-and-health/2018/10/19/17999994/stephen-colbert-skewers-white-supremacists-milk-chugging-new-york-times</a> “Ten Facts about Human Variation” by J. Marks “Human Races Are Not Like Dog Breeds: Refuting a Racist Analogy” by H. L. Norton and colleagues “Charles Murray Is Once Again Peddling Junk Science About Races and IQ” by E. Turkheimer, K. P. Harden, and R. E. Nisbett
12	M	March	2	Macroevolution: Speciation, tree thinking and the primate branch	6. Taxonomy, Species, Systematics, Phylogeny (Tree Thinking)	AIBA Ch. 6 & 7 EONS Video: “Your Place in the Primate Family Tree” “Reading a Phylogenetic Tree: The Meaning of Monophyletic Groups” by D. Baum “Why Should We Care about Species?” by J. Hey Video: “Speciation in Galapagos Finches” at <a href="https://www.youtube.com/watch?v=mcM23M-CCog">https://www.youtube.com/watch?v=mcM23M-CCog</a> “Darwin's Finches Tracked to Reveal Evolution in Action” by D. Cressey

						"Speciation: The Origin of New Species" by R. J. Safran
1 3	W	March	4	Macroevolution: Speciation, tree thinking and the primate branch		AIBA Ch. 6 & 7 "Hybridization and Gene Flow" by L. Stevison "Characteristics of Crown Primates" by E. C. Kirk "Macroevolution: Examples from the Primate World" by P. S. Clee and M. K. Gonder
1 4	M	March	9	<b>Midterm.</b>		<b>have read at least half of <i>Your Inner Fish</i> OR <i>Seven Skeletons</i></b>
1 5	W	March	11	Non-human primates: Locomotion	Midterm week, no lab	AIBA Ch. 8 "Primate Locomotion" by D. L. Gebo "Resource – Primates in Motion"
	M	March	16	Spring Break. No class		
	W	March	18	Spring Break. No class	No lab	
1 6	M	March	23	Non-human primates: Diet		AIBA Ch. 8 "New World Monkeys" by J. C. Dunn and J. Cristobal-Azkarate "Old World Monkeys" by J. M. Lawrence and M. Cords "Resource – Primate Feeding Videos" "Primate Teeth and Plant Fracture Properties" by P. S. Ungar
1 7	W	March	25	Non-human primates: Social behavior	7. The Feeding Game	AIBA Ch. 8 "Primate Sociality and Social Systems" by L. Swedell
1 8	M	March	30	The fossil record: Dating, evolution, fossils, & earth history		AIBA Ch. 9 & 10 "How to Become a Primate Fossil" by H. Dunsworth Musical Break: <a href="https://www.youtube.com/watch?v=-tJYN-eG1zk">https://www.youtube.com/watch?v=-tJYN-eG1zk</a> "Dating Rocks and Fossils Using Geologic Methods" by D. J. Peppe and A. L. Deino
1 9	W	April	1	Primate evolution; Miocene apes	8. Biostratigraphy	AIBA Ch. 9 & 10 Video: "First Primates" at <a href="https://www.youtube.com/watch?v=W_X5ciqtbG0">https://www.youtube.com/watch?v=W_X5ciqtbG0</a> "Timing the Primate Explosion" by B. Switek "Hominoid Origins" by L. M. MacLachy, W. J. Sanders, and C. L. Wuthrich "Planet of the Apes" by D. Begun "Ardipithecus ramidus" by A. Gibbons
2 0	M	April	6	Overview of hominin evolution: general issues and major events		AIBA Ch. 9 & 10 "Human Evolutionary History" by E. K. Boyle and B. Wood "Size, Science, and Scientific Truth" by A. P. Van Arsdale
2 1	W	April	8	The first hominins: The origin of bipedal locomotion	9. Osteology	AIBA Ch. 11 Video: "Ancient Human Ancestors Walking in the Woods" at <a href="https://www.youtube.com/watch?v=CrebQed8b2">https://www.youtube.com/watch?v=CrebQed8b2</a>

						Daily Double Musical Break” at <a href="https://www.youtube.com/watch?v=F69PBQ4ZyNw">https://www.youtube.com/watch?v=F69PBQ4ZyNw</a> AND <a href="https://www.youtube.com/watch?v=DUT5rEU6pqM">https://www.youtube.com/watch?v=DUT5rEU6pqM</a> “Skeletons Present an Exquisite Paleo-Puzzle” by A. Gibbons “ <i>Homo naledi</i> – A case study in understanding and evaluating hypotheses about hominin evolution” by D. Shapiro “Barefoot running strikes back” by W. L. Jungers
	Saturday	April	11	<b>AMNH Field Trip</b>		
2 2						AIBA Ch. 11 Video: “How ‘Lucy’ got her name” at <a href="https://www.youtube.com/watch?v=SKYjpetqYWI">https://www.youtube.com/watch?v=SKYjpetqYWI</a> “Lucy: A marvelous specimen” by C. M. Schrein Musical Break: <a href="https://www.youtube.com/watch?v=3AVWJzHvhFE">https://www.youtube.com/watch?v=3AVWJzHvhFE</a> Video: “Walking with Lucy” at <a href="https://www.youtube.com/watch?v=xT8Np0gIIdI">https://www.youtube.com/watch?v=xT8Np0gIIdI</a> “The ‘Lucy’ fossil rewrote the story of humanity” by M. Hogenboom Video: “Early Hominid Lucy May Have Died by Falling out of a Tree” at <a href="https://www.scientificamerican.com/video/early-hominid-lucy-may-have-died-by-falling-out-of-a-tree/">https://www.scientificamerican.com/video/early-hominid-lucy-may-have-died-by-falling-out-of-a-tree/</a>
	M	April	13	Lucy in the Sky (Who Fell From a Great Height)	10. Bipedalism in Comparative Context	
2 3	W	April	15	Early <i>Homo</i> : Origins, stone tools, and behavior		AIBA Ch. 11 “Facing up to complexity” by B. Wood “Who was <i>Homo habilis</i> ? And was it really <i>Homo</i> ?” by A. Gibbons “Malapa and the genus <i>Homo</i> ” by F. Spoor
	Friday	April	17	<b><i>Your Inner Fish / Seven Skeletons</i> review due at NOON</b>		
2 4						AIBA Ch. 11 “ <i>Homo erectus</i> - A bigger smarter faster hominin lineage” by A. P. Van Arsdale “Evidence for meat-eating by early humans” by B. Pobiner Listen: <a href="http://www.wnyc.org/story/317r-a-new-theory-of-evolution-cooking-made-us-human/">http://www.wnyc.org/story/317r-a-new-theory-of-evolution-cooking-made-us-human/</a> “Tracking life history at Nariokotome” by J. H. Langdon
2 5					11. Early Hominins	
	W	April	22	Neanderthals and Modern Human Origins		Are you behind on the reading? Time to catch-up.
2 6						
	M	April	27	Evidence from ancient DNA and modern DNA	12. Later Hominins	AIBA Ch. 12 (Others TBD)
2 7	W	April	29	Modern Homo sapiens: Migrations		AIBA Ch. 12 (Others TBD)



				around the World		
	Friday	May	1	<b>Describe and Explain essay due at NOON</b>		
2 8	M	May	4	Contributions of evolutionary anthropology		

*The final exam is scheduled for May 13, 2020 from 12:00 pm to 3:00 pm.*