Syllabus for: PHYSICAL ANTHROPOLOGY

Semester & Year:	Fall 2012
Course ID and Section Number:	ANTH 1: section E1610
Number of Credits/Units:	3.0 units
Day/Time:	**TTh 1:15-2:40**
Location:	LS 112
Instructor's Name:	Justine M. Shaw
Contact Information:	Office location and hours: Creative Arts 128 M 1:40-2:40, TTh noon-1pm and by appointment Phone: 707/476-4322 Email: justine-shaw@redwoods.edu

Course Description (catalog description as described in course outline):
An introduction to physical anthropology taught within the framework of evolutionary theory. To show how social and biological sciences are related, the course is organized into four major parts: evolutionary theory, nonhuman primates, human evolution, and modern human biological variation. These biological concepts are considered within the context of past and present cultures.

Student Learning Outcomes (as described in course outline) :
1. Explain the relationship of physical anthropology to social and biological sciences.
2. Analyze primary and secondary sources in order to extract information relevant to an issue of concern in physical anthropology.
3. Apply anthropological concepts to real-world situations and problems by processing factual information using scientific methods and anthropological concepts.
4. Create their own arguments based upon anthropological concepts and data.
5. Exhibit the ability to think logically about issues in physical anthropology and how people have interpreted those issues.
6. Discuss how physical anthropologists have analyzed and interpreted various aspects of human evolution.

Special accommodations: College of the Redwoods complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request at least one week before the first test so that necessary arrangements can be made. No last-minute arrangements or post-test adjustments will be made. If you have a disability or believe you might benefit from disability related services and may need accommodations, please see me or contact Disabled Students Programs and Services. Students may make requests for alternative media by contacting DSPS.

Academic Misconduct: Cheating, plagiarism, collusion, abuse of resource materials, computer misuse, fabrication or falsification, multiple submissions, complicity in academic misconduct, and/ or bearing false witness will not be tolerated. Violations will be dealt with according to the procedures and sanctions proscribed by the College of the Redwoods. Students caught plagiarizing or cheating on exams will receive an "F" in the course.

The student code of conduct is available on the College of the Redwoods website at:
http://www.redwoods.edu/District/Board/New/Chapter5/Ap5500.pdf

College of the Redwoods is committed to equal opportunity in employment, admission to the college, and in the conduct of all of its programs and activities.

ANTH 1: section E1610 TTh 1:15-2:40
Instructor: Justine M. Shaw, Ph.D. LS 112
Fall 2012 3.0 units

PHYSICAL ANTHROPOLOGY
CLASS SYLLABUS

Instructor Contacts:

Office:	Creative Arts 128
Office Phone:	707/476-4322
Office Hours:	M 1:40-2:40, TTh noon-1pm and by appointment
E-mail address:	justine-shaw@redwoods.edu (use the subject line "ANTH 1" for e-mails)
MyCR:	http://mycr.redwoods.edu/xsl-portal (link on main CR webpage too)
Mailbox:	in Creative Arts (NOT PS)

Course Description:
An introduction to physical anthropology taught within the framework of evolutionary theory. To show how social and biological sciences are related, the course is organized into four major parts: evolutionary theory, nonhuman primates, human evolution, and modern human biological variation. These biological concepts are considered within the context of past and present cultures.

Student Learning Outcomes:
Upon completion of this course, students should achieve the following:
1. Explain the relationship of physical anthropology to social and biological sciences.
2. Analyze primary and secondary sources in order to extract information relevant to an issue of concern in physical anthropology.
3. Apply anthropological concepts to real-world situations and problems by processing factual information using scientific methods and anthropological concepts.
4. Create their own arguments based upon anthropological concepts and data.
5. Exhibit the ability to think logically about issues in physical anthropology and how people have interpreted those issues.
6. Discuss how physical anthropologists have analyzed and interpreted various aspects of human evolution.

Themes:
1. Evolutionary theory - Physical anthropologists study the biological aspects of humanity through the paradigm of evolution. This evolution takes place on the level of populations, not individuals, and natural selection in a given context is the only directional influence.
2. Biocultural evolution - Human evolution differs from that of other species in that our cultures (learned and shared beliefs, practices, and traditions) have influenced, and continue to influence, the course of our evolution.
3. Scientific method - In science, hypotheses are formulated and then tested in an effort to refute the scientist's ideas. Approaches that construct stories or interpretations without such attempts at refutation are not scientific.

Issues:
1. Evolutionary theory and the role of natural selection in generating diversity.
2. The difference between scientific research and non-scientific beliefs and interpretations.
3. Although our genotype dictates our genetic potential, cultural and environmental factors are highly influential in shaping our phenotype, behaviors, actions, and beliefs; humans are a product of "nature" and "nurture."

Textbooks: The textbooks for this class are Essentials of Physical Anthropology, 9th edition (ISBN 111183718X) by Robert Jurmain, Lynn Kilgore, and Wenda Trevathan and Annual Editions: Physical Anthropology 2012-2013, 21st edition (ISBN-13 9780078051029) by Elvio Angeloni. Additional readings may be announced in class and posted on MyCR.

Reading: Readings will provide the basis for understanding the lectures and should be completed before coming to class. The "Reading List" page at the end of this syllabus contains the assignments for each week. Readings from the first text are listed as "Jurmain Ch.X" and readings from the second are given as "AE Article X". Jurmain readings should be done for the Tuesday of each week and Annual Editions readings should be done for the Thursday. You do not ever need to bring the Jurmain text to class but you should bring the AE text on each Thursday for which a reading is assigned.

Course Requirements:

Pop Quizzes	15%
Test 1	15%
Project 1	15%
Test 2	15%
Project 2	20%
Test 3	20%

Final Exam replaces lowest test (not project) score

Letter grades for the course will be assigned according to the following:

90-93% = A-	94-100% = A	
80-83% = B-	84-86% = B	87-89% = B+
	70-76% = C	77-79% = C+
	60-69% = D	
	<60% = F	

Class Attendance and Makeups: In order to pass this course, you will need complete, well-organized lecture notes. Test questions will be taken from EACH lecture. While the readings will help to flesh out concepts covered in the lectures, they do not provide a substitution for class attendance. If you miss a lecture, it is your responsibility to get notes from a classmate - the instructor does not provide notes for absent students. There will be no makeups for any class assignments/ pop quizzes/ tests and no late papers will be accepted. All papers must be turned in by the end of the day on which they are due. Papers/ assignments may be turned in via the instructor's mailbox in Creative Arts, in class/ in person, or via e-mail; students must then provide the instructor with a hard copy if an e-version is turned in on the due date. If you have an unexcused absence for any assignment/ quiz/ test, you will receive a zero for that assignment/ quiz/ test, which will be averaged into your final grade. If you have a valid written excuse (family or medical) or have made *prior* arrangements with the instructor to excuse you, then the value of the assignment/ test you were excused from will be added to the weight of your third test. For instance, if you are excused from the first test (15%), then your third test will count for 35%, rather than the standard 20%. Making "prior arrangements" with the instructor requires hearing back from the instructor with a positive response prior to the time that the assignment is due/ test is to be taken, not just leaving a message or providing a non-verifiable excuse after the due date.

Pop Quizzes: Five pop quizzes will be given during the course of the semester. You will need to bring a scantron and pencil with you to class each day in order to be ready to take the quizzes. Only the top three quiz scores will count towards your pop quiz grade. You may not make up pop quizzes.

Tests: Each of the three tests will cover approximately 1/3 of the course material (the first test will cover material since the start of the semester, the second test will cover material since the first test, and the third test will cover material since the second test). You will need to bring a scantron and pencil to take the objective portion of the tests, but you may write the essays on the test in pen or pencil.

Final Exam: The final exam for this course is optional. If taken and turned in, the score on the final exam will substitute for the lowest test score (Tests 1-3), even if the final exam score is lower than the grade for which it is being substituted. The final will be cumulative and will contain only two long essay questions (blue book required). The final exam may only be taken in class at the officially scheduled final time. The final exam may not be substituted for pop quizzes or papers.

Projects: Each student is required to compete 2 projects with at least 3 pages of text each (longer projects are generally needed to adequately cover the required material), double-spaced, typed in a standard 12 point font (Arial or Times New Roman) with one inch margins. Detailed instructions for each of these projects will be provided in class (see "Reading List" for assignment dates and deadlines).

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If you're unsure how to cite a source for one of your projects, check out the CR library's web page style guides for MLA (http://www.redwoods.edu/eureka/library/pdf/mlaciteformatspring2010.pdf).

ANTH 1 - PHYSICAL ANTHROPOLOGY
READING LIST

WEEK OF	TOPIC	TO READ **BEFORE** CLASS
8/28	Class Logistics; What is anthropology? What is science?	Jurmain Ch. 1
9/4	Development of Evolutionary Theory **Project 1 Assigned**	Jurmain Ch. 2 AE Article 2
9/11	The Biological Basis of Life: DNA and Cells	Jurmain Ch. 3 AE Article 3
9/18	Heredity and Evolution	Jurmain Ch. 4 AE Article 10
9/25	Primate Behavior Living Primates	Jurmain Ch. 6, 7
10/2	Primates: Models for Human Evolution	AE Article 12
10/9	**10/9 – First Test** Dating Methods and Geologic Time	
10/16	**10/18 - Project 1 Due; Project 2 Assigned** Paleoanthropology Macroevolution: Mammalian/ Primate Evolutionary History	Jurmain Ch. 5 AE Article 20
10/23	Hominin Origins	Jurmain Ch. 8
10/30	Hominin Origins	AE Article 21
11/6	*Homo erectus* and Contemporaries	Jurmain Ch. 9 AE Article 22
11/13	**11/13 – Second Test** Premodern Humans	Jurmain Ch. 10
11/20	*Homo sapiens sapiens* and *Homo floresiensis*	Jurmain Ch. 11 AE Article 26
11/27	Microevolution in Modern Human Populations Modern Human Variation **11/27 – Project 2 Due**	Jurmain Ch. 12, 13 AE Article 33
12/4	Legacies of Human Evolutionary History **12/6 - Third Test**	Jurmain Ch. 14 AE Article 35
	Optional Comprehensive Final Exam – TBA	

Note: I intend to promote an environment in this class in which all people are treated with dignity and respect. During the course of the semester, we may consider subjects with political and/ or ethical implications. Your tests, projects, and class participation will not be evaluated based upon the opinion that you express about these issues. Instead, your grade will relate to your ability to analytically approach these issues and bring related anthropological materials to support your argument.

The instructor reserves the right to add, delete, or revise sections of this course or syllabus. Changes will be announced in class.

Physical Anthropology
Project 1: Primate Observation of a Focal Individual

1) Make a visit to the Sequoia Park (or other) Zoo to determine what primates are present and select a species and individual that you would like to observe. Be sure to note any distinctive markings so that you may locate this individual animal in the future. If you are unable to visit the zoo even once, make an appointment with your instructor to discuss how the project can be done using web cameras; you may **not** do a web-cam-based project without prior instructor approval, however.

2) Find the literature on activities that this species does in the wild. Many sources are available in the CR library and through its online databases. The HSU and Humboldt County libraries also contain useful information. Pay particular attention to the amount of time that wild animals of this species typically spend on specific activities in a given day. This research will also help you to generate a list of the range of behaviors to look for in a given species. Be sure to write down the complete citation for any source you use to include with your paper. You must use at least three different sources besides your textbooks (Jurmain et al. and *Annual Editions*) and at least one of these must be from a non-Internet source. You may not use Wikipedia as a source.

3) Return to the zoo multiple times, for a total of **at least** 2 hours. During this time, you will put together an "activity budget" of the kinds of activities you might expect one animal to do over the observation period. In your observations, keep a running minute-by-minute tally of what your special individual is doing. When you are finished, add similar activities up to get your activity budget with totals and/ or percents for each activity. Your activity budget can be provided in text or graphic form, although percentages must be included in some manner. An example would be:

> Eating = 20 minutes or 12.5% of the total observation time of 120 minutes.
> Sleeping = 16 minutes or 10% of the total
> Playing = 32 minutes or 20% of the total….etc.
> (you **must** use more categories than this to provide a detailed breakdown of activities)

4) Next, compare your focal individual's activity budget with that of a wild animal from your readings. How are they different? **Why** do you think they are different? Be sure to cover at minimum five differences.

5) Write up your findings in a typed paper **minimally** 3 pages long, double-spaced in a standard 12-point font (Arial or Times New Roman) with 1 inch margins. Put your name, class information, and any project title on a separate title page. Provide in text citations (MLA or other standard) of all materials used in your paper as well as in a "references cited" section at the end of the paper. Also, be sure to turn in a copy of your individual's time budget (citations and title page don't count towards the 3 page total). You are welcome, but not required, to provide sketches, photographs, or other illustrations to help clarify your work (but again, they aren't going to count towards the 3 page minimum). Remember, most students require more than the 3-page minimum to adequately cover the requirements of the Project – it is quite unlikely that doing just the "minimum" will result in anything higher than an average grade (C) on the paper.

Note: Any ideas, information, terms, or quotes obtained from a source (brochure, lecture, textbook, Internet page, article, etc.) must be cited in the text and a complete citation should be provided in a "references cited" section (MLA or other standard style). The library's reserve section has an MLA style manual to demonstrate proper citation formats. Failure to provide these citations is plagiarism and will result in failure in the course.

Physical Anthropology
Project 1: Grading Strategy

Your project will be graded according to the following ten categories, each valued at ten points. Your success in each category will be evaluated relative to your classmates - so several people may receive a ten in each category.

_____ grammar, punctuation, and spelling
(addl. comments)_____

_____ flow, readability, intelligibility

_____ followed basic directions (did observations, min. length/ proper format)

_____ provided citation(s) in text & refs. cited section for research on wild examples

_____ named and described genus/ species and individual studied using references

_____ provided organized summary of information gained from your zoo research

_____ provided budget from zoo observations with breakdown by specific activities

_____ provided detailed comparisons of wild and zoo data in ≥ 5 areas

_____ provided detailed explanations of differences between wild and zoo data

_____ provided an in-depth analysis of one of more aspects of your research and/ or the species that you studied utilizing anthropological terms and concepts

ANTH 1: Physical Anthropology

Project #2: Hominin Phylogenic Diagram

In this course, you have learned that many aspects of early hominin studies are far from "settled." Considerable controversy still exists about much of our "family tree," due to small samples and spotty preservation of the fossil record. Additionally, physical anthropologists considering the same evidence, but stressing different traits, may construct entirely different scenarios and new evidence is continually being discovered. Therefore, a good understanding of evolution, genetics, morphology, and the fossil record is needed to critically evaluate any set of proposed relationships.

In order to sort out hominin evolution for yourself, Project 2 requires you to create a phylogenic hominin diagram (which must include a time scale), like those seen in Jurmain and shown in class (not a cladistic diagram or timeline only). Your family tree is to **include all of the genera and species that you consider to be hominins but no species that are not hominins**, also the approximate dates that each diverged and existed, and using lines to indicate ancestor/ descendant relationships between all species on the diagram. Dates may be indicated by providing a timescale on the side of your diagram or written next to each genus species name. You may use one of the family trees provided in Jurmain (cite this), a tree from another source (cite this), or you may create your own scenario (citing basis for it). However, you may not turn in photocopied, scanned, or printed-off diagrams – you must turn something you drew by hand or on the computer by yourself.

In researching hominin species, you must use at least three different sources besides your textbooks (Jurmain et al. and *Annual Editions*) and at least one of these must be from a non-Internet source. You may not use Wikipedia as a source.

To successfully complete this task, you must work through several problems. A) What/ Who do you consider to be a hominin and why? B) How much variation is possible/ acceptable within a species? and What sort of differences require samples to be classified as different species? C) What traits do you consider to be most important in reconstruction evolutionary relationships? You will create this "family tree" by considering homologous (based on descent from a common ancestor) traits present.

Your text will contain detailed descriptions of each species covered in class, whether or not you decided to include each on your diagram. For any species/ genus covered in class that you decided not to include (perhaps because of small sample size or because you don't think that it is distinct enough to be a separate species), you will include detailed arguments about why you did not include that species on your diagram.

In at least 3 pages of text (double-spaced, 12 point standard font, 1 inch margins, with title page and references cited page), you will explain the position of each species in the "family tree" you drew. This will include justifying what qualifies each as a hominin, what makes each species distinct, and reviewing the evidence that causes you to hypothesize each relationship. You will also need to discuss why you **didn't** choose other popular scenarios and/or species. There is not a single "right" scenario that I'm looking for – I will focus on your ability to bring evidence to bear upon your argument and how well you make your case. Stating "because Leakey said so…" won't help your case, but discussing the thickness of dental enamel or similar pelvis shapes would. Keep in mind that most students do require more than the 3-page minimum to adequately cover the

requirements of the Project – it is quite unlikely that doing just the "minimum" will result in anything higher than an average grade (C) on the paper.

Note: Any ideas, information, terms, illustrations, or quotes obtained from a source (brochure, lecture, textbook, Internet page, article, etc.) must be cited in the text and a complete citation should be provided in a "references cited" section (MLA, APA, or other standard style). The MyCR site (under "resources") has a document with examples showing proper citation formats. Failure to provide these citations is plagiarism and will result in failure in the course.

Physical Anthropology
Project 2: Grading Strategy

Your project will be graded according to the following ten categories, each valued at ten points. Your success in each category will be evaluated relative to your classmates - so several people may receive a ten in each category.

_____ grammar, punctuation, and spelling
(addl. comments)_____

_____ flow, readability, intelligibility

_____ followed basic directions (min. length/ proper format)

_____provided citation(s) in text & references cited for info sources used

_____ provided intelligible phylogenic diagram with clearly labeled species and reasonable dates

_____ included a detailed, clear, and complete definition of "hominin" and justification for what is the first hominin included on diagram

_____ discussed evidence behind Australopithecine/ early hominin relationships using multiple anatomical details for each species

_____ discussed evidence behind *Homo* relationships using multiple anatomical and cultural details for each species

_____ discussed why other scenarios, genera, and species included in class lectures weren't included on diagram using multiple anatomical and cultural details to justify your decisions

_____ provided an in-depth analysis/ argument concerning one of more aspects of your research utilizing anthropological terms and concepts

ANTH 1: Physical Anthropology
Review Sheet for Tests

Each of the three tests will consist of 40 objective questions (such as matching, multiple choice, and true/ false questions) worth 2 points each and two short essay questions worth 10 points each. Test 1 will cover material from the start of the class until Test 1. Test 2 will cover material from Test 1 until Test 2. Test 3 will cover material from Test 2 until Test 3. You need to bring a scantron in order to take the test. Neither the instructor nor College of the Redwoods will provide scantrons. Students without scantrons may NOT take the test.

To study for the tests, I suggest that you do the following:

- ✓ Go through each chapter of Jurmain et al. assigned for the test (see your syllabus for chapter numbers), noting all the terms and names in **bold**, which are also defined in the margins of the page. Make a list of these with a short definition for each. (Remember, to keep the exam reasonably short, I'm going to boil most definitions down to one sentence.) Writing these out will help to you memorize them. While you will not have to write out any definitions on the exam, you will have to know them well enough to select the definition from a list of possibilities or write "false" for an incorrect definition. Be sure to note the differences between superficially similar terms. Emphasize terms that were covered in lecture over those that were not mentioned in class.
- ✓ Read through the "Summary" at the end of each chapter to help you decide what information from the chapter is most important.
- ✓ Go through your notes, noting the terms that are repeated in class and in your reading. These terms are considered by your instructor to be more important than terms not mentioned in class and are therefore more likely to be on the exam. Terms in the book that are not mentioned in class are less likely to be on the exam, but may still appear in very low frequencies. Some terms may be brought up by your instructor that are not in the book – these are also important to know.
- ✓ Like terms, the cases/ specific examples given in class are going to be stressed over materials never mentioned in class.
- ✓ Practice writing out answers to the "Critical Thinking Questions" at the end of each chapter. While these questions won't be on the test exactly as they are stated in the book, practicing writing out answers to the questions will help you review the most important material from each chapter.
- ✓ Summarize the Annual Editions articles in 3-5 main points, being sure to associate the author and/ or article title with the information for purposes of identification on test questions. The discussion questions for each AE article are posted on MyCR in the "resources" area.

(keep going…)

Answering the following questions as completely as possible will also help you review much (not all) of the textbook/ lecture materials. Be sure to review the Annual Editions readings for each test also.

For Test 1:

- What is anthropology? What are each of the subdisciplines? What are Applied vs. Academic anthropology?
- What is science? Do you think anthropology is a science? Why or why not?
- What individuals were important in developing systematic ways to describe biological diversity? What concepts did each contribute?
- What individuals were important in developing the concept of evolution? What concepts did each contribute?
- How did Charles Darwin explain evolution? What is natural selection?
- What are some of the main organelles within a cell? What is each responsible for?
- What is DNA? What type of information does it contain? How does it replicate?
- How does protein synthesis take place?
- What is a gene? How do mutations occur? What are chromosomes?
- What are mitosis and meiosis?
- Who is Mendel? What are the genetic principles that he discovered?
- What is a Punnett square? What are Mendelian traits? How are they inherited in humans?
- How are non-Mendelian traits inherited?
- What is mitochondrial DNA (mtDNA)?
- What is "modern evolutionary theory"? What are some factors that produce and redistribute variation?
- What factors influence the behavior of primates? What are some types of primate social behaviors? Reproduction and reproductive strategies? Mother/ infant behaviors?
- What traits are characteristic of all primates? What hypotheses attempt to explain these traits?
- How are primates commonly categorized? How are modern humans classified? What types of other primates exist today?
- What traits distinguish humans from other primates? To what extent do other primates exhibit some of these traits?
- How can studying primates help us model human evolution? What are some dangers in these projections?

For Test 2:

- What is paleoanthropology? What methods are used by paleoanthropologists?
- What is Olduvai Gorge? What is it noted for?
- What dating methods are used by paleoanthropologists? What basic principles govern each? What is the time range of each?
- What is experimental archaeology?
- How are early hominin environments and behaviors being reconstructed?
- What is taxonomy? What are some of the basic rules of Linnean classification? What are some other types of classification used to construct evolutionary "trees"?
- What is a species? How are species interpreted in the fossil record?
- Briefly summarize vertebrate and mammalian evolutionary history. Why is it difficult to interpret the relationships between Miocene hominoids?
- What is macroevolution? Adaptive radiation? What is gradual vs. punctuated equilibrium?
- What is the Plio-Pleistocene? What do we know about early hominins of this time?
- What changes had to take place to allow for bipedalism?
- What are some of the earliest possible hominins?
- What are Australopithecines? What species of *Australopithecus* are commonly recognized?
- What distinguished early members of the genus *Homo* from Australopithecines?
- How did early hominins vary regionally?

- What major taxonomic issues exist in early hominin studies? Why do many different possible "family trees" exist? Which do you agree with and why?
- What morphological and behavioral characteristics distinguish *Homo erectus* from other hominins?
- What is the Middle Pleistocene? Who are Neandertals? What is their relationship to other hominins, including modern humans? What do we know about Neandertal culture?
- What evolutionary trends are seen in the genus *Homo*?
- Why is hominin evolution described as being "biocultural"?
- NOTE: Doing most or all of Project 2 prior to the test will provide a very valuable review of the information covered on the test.

For Test 3:

- What major hypotheses attempt to explain the origins of AMH (*Homo sapiens sapiens*)? Which do you agree with and why?
- What new behaviors emerge in the Upper Paleolithic?
- How are modern human populations defined and described? What is the Hardy-Weinberg theory of genetic equilibrium?
- What is nonrandom mating?
- What is a polymorphism?
- What is the ABO system? Rh? What other polymorphisms are commonly studied? What are the implications of polymorphic variability in modern humans?
- Why is it important to examine the cultural context of humans in order to understand evolutionary processes?
- How has human variation been historically viewed? What is race?
- How is human population diversity studied today? How and why is modern human variation adaptive?
- How have infectious diseases impacted human populations?
- Why are human infants born with underdeveloped brains (relative to other species)?
- How can nutrition impact human growth and development?
- What is behavioral ecology?
- How are humans impacting the planet and other life forms? How have our populations grown? How have we accelerated the evolutionary process for other lifeforms?

I recommend that you save all of your study information to help you review this material in case you choose (or are obligated to take) the comprehensive final.