

ANTHROPOLOGY 430: HUMAN EVOLUTIONARY ANATOMY
SPRING 2017 – 3 CREDITS

INSTRUCTOR: Dr. Britney Kyle
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OFFICE: Candelaria 2056
OFFICE HOURS: M 11:30am-2:15pm, W 11am-12:15pm,
W 1:30-2:30pm, and by appointment

CLASS TIME AND LOCATION: MWF 9:05-10:55am, Candelaria 1190

REQUIRED TEXT: *The Wisdom of the Bones: In Search of Human Origins* by Alan Walker and Pat Shipman. Vintage Books. ISBN: 978-0679747833

COURSE DESCRIPTION:

This course examines the biomechanics, anatomy, and physiology of human activities. We will use evolutionary theory to investigate critical evolutionary changes in the human form, and why our body's structure allows it to function the way that it does. We will study the human musculoskeletal system, and draw from the research of paleoanthropologists, engineers, and anatomists to investigate our capacity for skilled behavior. At the end of this course, students should recognize the distinctive features that make us uniquely human, as well as the many features we share with other members of the animal kingdom.

COURSE LEARNING OBJECTIVES:

- Students will recognize the distinctive features that make *Homo sapiens* uniquely human
- Students will be able to explain the selective pressures behind major physiological changes in the human body
- Students will produce a research paper and give a presentation about a biomechanical adaptation in human populations

DEPARTMENTAL LEARNING OUTCOMES:

This course addresses several of our department learning goals, including: knowledge of advancements in biological anthropologists' understanding of human biological evolution, skill at using the scientific method in addressing problems of human evolution, and skill at critical thinking about issues in human evolution.

INSTRUCTOR-STUDENT COMMUNICATION:

Students should not hesitate to contact the instructor with any questions, comments, or concerns. The instructor may be reached at the email address and office above. If the instructor's office hours conflict with your schedule then you should contact the instructor to schedule a special appointment.

CLASS NEWS AND CANCELLATION:

In case of unexpected instructor absences, the information will be posted on the **Blackboard website**. This site should be consulted in the event of inclement weather to check for possible class cancellations or delays. Changes or cancellation of office hours will also be posted on Blackboard.

STUDENTS WITH DISABILITIES:

Any student requesting disability accommodation for this class must inform the instructor by giving appropriate notice. Students are encouraged to contact Disability Support Services at (970) 351-2289 to certify documentation of disability and to ensure appropriate accommodations are implemented in a timely manner.

ACADEMIC MISCONDUCT:

All members of the University of Northern Colorado community are entrusted with the responsibility to uphold and promote five fundamental values: Honesty, Trust, Respect, Fairness, and Responsibility. These core elements foster an atmosphere, inside and outside of the classroom, which serves as a foundation and guides the UNC community's academic, professional, and personal growth. Endorsement of these core elements by students, faculty, administration, and trustees strengthens the integrity and value of our academic climate.

Cheating, plagiarism, forgery, and all other forms of academic misconduct are unacceptable in this course, and at UNC. UNC's policies and recommendations for academic misconduct will be followed. For additional information, please see the Dean of Student's website, Student Handbook link <http://www.unco.edu/dos/handbook/index.html>. Lack of knowledge of these requirements will not be viewed as an excuse for noncompliance. Cheating, plagiarism, and forgery will result in a zero for that assignment and may result in a failing grade for the course.

COURSE REQUIREMENTS:

Leading Discussions: Students will lead class discussion in pairs, once throughout the semester. The pair should prepare a brief (3-5 minutes) summary of the assigned article(s), plus one additional article found by each group member. This summary should include the key points and arguments (thesis statement) of the readings, the strengths and weaknesses of the readings, and should make connections with previous readings we've done throughout the course. Discussion leaders will write out this summary to be turned in, but should not just monotonously read the summary to the class.

Each pair should also come up with 4-6 questions that are designed to stimulate discussion. This means that the questions cannot have a single, short answer, but should probe for the thoughts and opinions of others in the class. Discussion questions should be emailed to me the night before you lead the discussion group, so that I can make suggestions before class begins.

Quizzes: Four quizzes will occur throughout the semester and cover material presented since the last quiz. These will measure your knowledge and understanding of the concepts we discuss in class. **Material from readings will be included on quizzes.**

Reading Quizzes: There will be three to four in-class pop quizzes throughout the semester to ensure that everyone is doing the course readings. You do not need to study explicitly for these quizzes. Quizzes will be designed to measure whether or not students are reading. If you do the readings, you should do fine on these quizzes.

Labs and Assignments: Several assignments and labs will be given throughout the course, including the original of bipedalism debate. Much of the work for these assignments will be done during class. However, written analyses of the results will be completed on your own time.

Final Paper: Chose your own topic and write a paper about one biomechanical adaptation in humans. This should be an argumentative paper and should center around a central thesis statement. You will be graded on the following: do you have a strong thesis statement, do you effectively use anthropological evidence to support your argument, do you explain the anthropological significance of your argument, and do you effectively incorporate evolutionary theory (and/or other theoretical approaches to make your point)? The paper should draw from at least 10 academic sources. Papers should also be approximately **7-8 pages, double-spaced** and include **terminology and discussion of concepts learned throughout the course**. All papers should be typed, Times New Roman, 12-point font, with one inch margins. A rubric with grading criteria for papers is posted on Blackboard.

Final Presentation: You will present your research findings in a 7-9 minute presentation at the end of the semester. Details about the presentation will be discussed in class. As with the paper, you will be graded on the following: do you have a strong thesis statement, do you effectively use anthropological evidence to support your argument, do you explain the anthropological significance of your argument, and do you effectively incorporate evolutionary theory (and/or other theoretical approaches to make your point)? You will also be asked to communicate the material in a professional and thorough manner. A rubric with grading criteria for presentations is posted on Blackboard.

Attendance and Participation: It is important to attend class regularly in order to do well in this course. Lectures will undoubtedly cover material that is not found in the texts. If you miss a lecture for whatever reason, lecture notes will not be provided. All absences must be officially documented with a doctor's excuse, accident report, etc. In the event that you cannot provide such documentation, the absence will be considered unexcused and will affect your participation score. In-class assignments cannot be "made-up" if

the absence is unexcused. If you need to leave a lecture early, it is essential that you discuss this with the instructor **BEFORE** class begins. Attendance may be taken at the **beginning or end** of each lecture.

One of the best ways to retain information is by articulating your thoughts on new or complex material; therefore participation is required to attain the full credit for this portion of your grade. Please remain on topic when asking/answering questions. This is a class of mutual respect, and if this respect is violated, the instructor reserves the right to deduct participation points (see clause below for expectations of respect).

GRADING PROCEDURES:

Late assignments will be **docked by 10% for every calendar day** that they are late, ie. one day, 10%, two days 20%. No extra credit will be offered.

Grade Breakdown for Course Requirements

Assessment	% Final grade
Leading Discussions	7.5
Quizzes	25
Pop Reading Quizzes	7.5
Labs and Assignments	15
Final Paper	25
Final Presentation	10
Attendance and Participation	10

GRADING SCALE

<u>Percentage</u>	<u>Letter Grade</u>	<u>Quality Points</u>
93-100	A	4.000
90-92	A-	3.667
88-89	B+	3.334
83-87	B	3.000
80-82	B-	2.667
78-79	C+	2.334
73-77	C	2.000
70-72	C-	1.667
68-69	D+	1.334
63-67	D	1.000
60-62	D-	0.667
0-59	F	0.000

PHILOSOPHY OF GRADING:

I do not give grades; students earn their grades. Your final grade is your responsibility. The only legitimate reason to change a grade is if there was a mistake in grading. Any questions about grading must be discussed with the instructor within the first week following the exam/assignment.

The following is a schedule of the major topics that will be covered in this class. It should be considered tentative and may be modified during the course of the quarter as determined by factors such as student progress and amount of class discussion.

Week		Topics Covered	Readings
1	M 1/9	<i>Intro to Human Evolutionary Anatomy / Course Mechanics</i> Anatomical terminology activity	A.T. Handout
	W 1/11	<i>Evolutionary Theory</i>	Stanford Ch. 4
	F 1/13	<i>Evolutionary Theory continued</i>	
2	M 1/16	No Class - Happy Martin Luther King Day!	
	W 1/18	<i>The Human Skeleton</i>	
	F 1/20	<i>Muscles and Nerves</i>	Aiello and Dean (1990), Ch. 3
3	M 1/23	<i>Bone Biomechanics</i>	Martin, 2003
	W 1/25	<i>The Biomechanics of Movement</i>	Ruff et al., 2006; Alexander, 2003 (Ch. 3)
	F 1/27	<i>The first hominins</i>	White et al., 2009; Fleagle Ch. 17
4	M 1/30	<i>The Australopithecines</i> Assignment of hypotheses for bipedalism debate	Lovejoy, 1988; Stern, 2000
	W 2/1	<i>The Australopithecines and bipedalism overview</i>	
	F 2/3	Quiz 1	
5	M 2/6	<i>Walking and Running</i> Optional additional reading: Saibene and Minetti, 2003	Alexander, 1984; Bramble and Lieberman, 2004
	W 2/8	<i>Writing Research Papers – Choosing a topic</i> <i>The evolution of Walking</i>	Handouts Wayman, 2012
	F 2/10	Origins of bipedalism debate	
6	M 2/13	<i>Robust and Gracile Australopithecines</i> Thesis statements and 3 sources due	Wood and Strait, 2004
	W 2/15	<i>The evolution of the genus Homo</i>	Anton and Snodgrass, 2012
	F 2/17	<i>Reaching and Throwing</i>	Roach et al., 2013
7	M 2/20	Quiz 2	
	W 2/22	<i>Grasping and Toolmaking</i>	Ambrose, 2001
	F 2/24	<i>Brain expansion</i>	Aiello and Wheeler, 1995; Dunbar, 2003
8	M 2/27	<i>The evolution of complex thought</i>	Heyes, 2012
	W 3/1	<i>Homo erectus</i>	Coqueugniot et al., 2004
	F 3/3	Discussion of The Wisdom of the Bones	The Wisdom of the Bones due
9	M 3/6	<i>Breathing, Circulation and Energy</i>	Cartmill et al., 1987 (p 115-126)
	W 3/8	<i>Archaic Homo sapiens</i>	Bae, 2013; Rightmire, 1998
	F 3/10	<i>Archaic Homo sapiens – new evidence</i>	Wenz, 2014; Huerta- Sanchez et al., 2014
10	M 3/13	No class – Spring Break	
	W 3/15	No class – Spring Break	
	F 3/17	No class – Spring Break	

Week		Topics Covered	Readings
11	M 3/20	<i>The Neandertals</i>	Monnier, 2012
	W 3/22	<i>The Neandertals continued</i>	Golovanova et al., 2010; Smith et al., 2005
	F 3/24	<i>Eating and Chewing</i> Quiz 3	Spencer and Demes, 1993; Aiello and Dean, 1990 – Ch. 6
12	M 3/27	<i>Speech</i>	Fitch, 2000
	W 3/29	<i>Anatomically Modern Homo sapiens</i>	
	F 3/31	<i>The most successful hominins?</i>	The economist, 2011; Mardi, 2012; Henrich and McElreath, 2003
13	M 4/3	Who's the most successful hominin debate	
	W 4/5	Writing effective research papers – citation and theoretical orientation	
	F 4/7	<i>Hearing and balance</i>	
14	M 4/10	Paper outlines due – be prepared to explain your rationale for why you organized your paper in the way you did	
	W 4/12	<i>Sight and Smell: Implications for feeding decisions</i>	Dominy et al., 2001
	F 4/14	<i>Comparative embryology</i> Comparative Embryology video	Comparative Embryology reading
15	M 4/17	<i>Thermoregulation</i>	Ruff, 1993
	W 4/19	No Class – AAPA conference	
	F 4/21	No Class – AAPA conference	
16	M 4/24	<i>Sports: Cycling and swimming</i>	Alexander, 2003 (Chs. 17&18)
	W 4/26	Quiz 4	
	F 4/28	Final Papers due / Class Presentations	
17	F 5/8	Class Presentations Tuesday, May 2nd – 10:45am-1:15pm	

Respect: In this class the expectation is of mutual respect. The instructor will show respect for students. Students will show respect for the instructor, any guests and one another. Some examples of respect include (but are not limited to):

- Listening when others talk.
- Not having conversations with others while someone is talking.
- Not browsing the internet, chatting online or texting during class.
- Limiting interruptions. This means turning off your cell phone when you come to class or putting it on the silent mode.
- Entering the room quietly when you are late.

Take time to record the name, email address, and/or phone number of at least 2 students in the class that you can contact regarding missed notes and class information.