



## ANTH 3043: Bones, Bodies, and Brains in Evolutionary Perspective

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### CLASS TIMES

Monday/ Wednesday/ Friday, 9:40-10:30am, MAIN 323

### CONTACT INFORMATION

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Old Main 334

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Office Hours: Monday 2:00-3:00 pm and Tuesday 9:00 to 11:00am, or by appointment

### COURSE DESCRIPTION AND OBJECTIVES

Have you ever wondered how your vision compares to that of a dog, monkey, or reptile, or why humans have an appendix if all it seems to do is cause trouble? This course will explore these topics and more.

Through a combination of lectures and hands-on experience this course will:

- Review the anatomy of the human body, comparing and contrasting human anatomy with the anatomy of primates, mammals, and vertebrates
- Place human anatomy into an evolutionary context and understand how the major features of the vertebrate, mammalian, primate, and human body plans emerged
- Examine the biomechanics governing how the human and mammalian body functions

### COURSE TEXT

Langdon JH. 2005. *The Human Strategy: An Evolutionary Perspective on Human Anatomy*. Oxford: Oxford University Press. (ISBN-13: 978-0195167351)

I recommend using an anatomy coloring book to reinforce your knowledge of the anatomical structures we'll be discussing. Here are a couple of options:

- Kapit W, Elson LM. 2013. *The Anatomy Coloring Book*. (ISBN-13: 978-0321832016) (this has more basic anatomy)
- Hansen J. 2014. *Netter's Anatomy Coloring Book*. Philadelphia: Saunders. (ISBN-13: 978-0323187985) (this book has more detailed anatomy)

Though I will not be assigning readings from it, I will be using a free online Anatomy & Physiology text for some illustrations and basic background information. This text (OpenStax College, *Anatomy & Physiology*. OpenStax College. 25 April 2013.) can be downloaded for FREE (as a pdf, Ebook, or zip file) at <http://cnx.org/content/col11496/latest/>.

## COURSE REQUIREMENTS

Performance in the course will be assessed via exams, participation, and in-class quizzes.

<b>Deliverable</b>	<b>Percentage</b>
Participation	10%
In-class quizzes	6 x 4%/quiz = 24% total
Exam 1	20%
Exam 2	20%
Exam 3	20%
Anatomy Challenge	5%
<b>Total</b>	<b>100%</b>

### **Participation**

Participation in this course is critical for learning this material, and participation/attendance will represent 10% of your grade. Participation will be evaluated via instructor assessment based on in class interactions and attendance (5%), and peer evaluations from your group (5%). A pattern of missed classes and lack of engagement during class will result in reduced credit. Participation credit may also be earned by submitting worksheets and exam study guides as offered throughout the course. More details about these opportunities will be provided during the semester.

### **In-class quizzes**

Six in-class quizzes will be offered throughout the semester. Quizzes will take place immediately at the beginning of class, and you will work in teams to complete these quizzes. These quizzes are designed to give you an idea of the types of questions and content you will see on the exams, and by working in groups you are able to work with other students in the class to build your knowledge. Groups will be assigned at the beginning of the semester and will stay the same throughout the course. You must attend class to get credit for the quiz- no make-up quizzes will be offered. If you arrive more than 3-5 minutes late for a quiz you will be required to take the quiz without your group.

### **Exams**

There will be three exams spread evenly throughout the semester. Exams will consist of multiple choice, fill in the blank, matching, and/or short answer questions. Make-up exams will only be issued for excused absences (illness, funerals, or other family emergencies) and supporting documentation must be provided (doctor's note, funeral notice). If it becomes necessary for you to miss an exam, you MUST notify Dr. Terhune BEFORE the exam date and time so that appropriate arrangements can be made. Make-up exams must be taken within one week of the original exam date.

### **Anatomy Challenge**

The anatomy challenge will take place during the last week of class and will represent an opportunity for your teams to demonstrate the knowledge that you have gained about bones, bodies, and brains throughout the semester. This will be a trivia style competition between teams. More details on this assignment will be provided as the course progresses.

### **Extra Credit**

Interested students can earn up to 5% extra credit on their final grade by reading and providing a summary/review of one of the following popular science books (other books may be OK, but you must get permission from Dr. Terhune):

- Shubin N. 2009. *Your Inner Fish: A Journey into the 3.5-Billion-Year History of the Human Body*. New York: Random House. (review the book, not the TV series!!)
- Roach M. 2004. *Stiff: The Curious Lives of Human Cadavers*. New York: WW Norton & Co.
- Lieberman D. 2013. *The Story of the Human Body: Evolution, Health and Disease*. New York: Random House.

Summaries must be at least three pages (1.5 spacing, 1 inch margins, Calibri font, 11pt font) and no more than five pages in length. This write-up should provide a review of the text you read, highlighting both things that were supported by content you learned about in class as well as things that you read in the book that surprised you. You should also make sure to critique the book in light of what you learned in this course. Write-ups will be due the last day of class, May 2<sup>nd</sup>.

### **Late Assignments**

Assignments are due on the date assigned in the syllabus. Late assignments will only be accepted for five days after the original due date, and for each day an assignment is delayed 5% points will be deducted from the assignment's grade.

### **Grading Scale**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>
>90%	80-89.9%	70-79.9%	60-69.9%	<60%

\*Please note I do not round up from this scale.

### **ACADEMIC HONESTY**

From the provost: "As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail."

"Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy,' which may be found at <http://honesty.uark.edu>. Students with questions about how these policies apply to a particular course or assignment should immediately contact the instructor."

Violations of the Academic Integrity Policy will not be tolerated. All suspected violations will be submitted to and adjudicated by the Academic Integrity Monitor following the guidelines outlined at [www.honesty.uark.edu](http://www.honesty.uark.edu).

### **TECHNOLOGY POLICY**

The use of LAPTOPS, CELL PHONES, AND TABLET COMPUTERS is not permitted for any reason. This includes all of the following:

- Texting/ emailing/ using cell phones in any way
- Using cell phones to check the time
- Use of cell phones, tablets, or laptops to take notes

Several studies have shown that note-taking on laptops is less effective than taking notes by hand, in terms of learning and retention. Research has also demonstrated that students who take notes on laptops tend to write what the professor/slides say verbatim, which leads to less integration of information and shallower processing, compared to students who take notes by hand (Mueller & Oppenheimer, 2014; <http://pss.sagepub.com/content/25/6/1159>). Students violating this rule will be given one warning and thereafter will be asked to leave class (and will not receive attendance credit for that day). Students with CEA accommodations may be exempt from this policy (depending on the nature of the accommodations), but any such students must speak directly with Dr. Terhune about this issue. If you have an emergency need to access your cell phone (illness, family/personal emergency, etc.) please see Dr. Terhune.

### **INCLUSION**

A diverse representation of backgrounds and experiences is important for fostering an environment of critical thinking that is central to a university education. It is my expectation that everyone in ANTH 3043 will maintain respectful interactions with other students and instructors in this course. This includes respect for the variety of backgrounds and lived experiences, be they biological, cultural, and/or social, that everyone in this course brings. If at any point you feel disrespected in this class, please talk with me right away and I will do my best to address your concerns.

### **EDUCATIONAL ACCESS**

University of Arkansas Academic Policy Series 1520.10 requires that students with disabilities are provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please verify your eligibility through the Center for Educational Access (contact 479-575-3104 or visit

<http://cea.uark.edu> for more information on registration procedures). If you are registered with CEA and require extra time for the exam, it is your responsibility to make an appointment with CEA. Your exam will be proctored by CEA staff at their testing center. Students with CEA accommodations are required to take their exams at the same time as those held in lecture, unless prior arrangements are made with the professor.

### **EMERGENCY PROCEDURES**

Many types of emergencies can occur on campus; instructions for specific emergencies such as severe weather, active shooter, or fire can be found at [emergency.uark.edu](http://emergency.uark.edu).

In case of violence and/or an active shooter, do the following:

- CALL- 9-1-1
- AVOID- If possible, self-evacuate to a safe area outside the building. Follow directions of police officers.
- DENY- Barricade the door with desk, chairs, bookcases or any items. Move to a place inside the room where you are not visible. Turn off the lights and remain quiet. Remain there until told by police it's safe.
- DEFEND- Use chairs, desks, cell phones or whatever is immediately available to distract and/or defend yourself and others from attack.

**This syllabus is subject to change at the discretion of the professor.**

**CLASS SCHEDULE (Subject to Change)**

<b>Date</b>	<b>Topic</b>	<b>Readings</b>	<b>Deliverable</b>
1/14/2019	Course introduction and expectations	none	
1/16/2019	Evolutionary theory and adaptation 1	Langdon Ch 1	
1/18/2019	Evolutionary theory and adaptation 2	Langdon Ch 1	
1/21/2019	<b>MLK Day- NO CLASS</b>		
1/23/2019	A brief history of time part 1: vertebrate origins	Langdon Ch 2	
1/25/2019	A brief history of time part 2: tetrapods	Langdon Ch 2	<b>Quiz 1</b>
1/28/2019	A brief history of time part 3: mammals	Langdon Ch 2	
1/30/2019	Fundamentals of anatomy	Langdon Ch 3	
2/1/2019	The nervous system	Pdfs posted to BB	
2/4/2019	Basic bone and muscle biology	Langdon Ch 3; Pdfs posted to BB	
2/6/2019	Biomechanics		<b>Quiz 2</b>
2/8/2019	Unit 1 Review		
2/11/2019	<b>Exam 1</b>		
2/13/2019	Head and neck anatomy	Langdon Ch 4	
2/15/2019	The cranial nerves	Pdfs posted to BB	
2/18/2019	Face	Langdon Ch 4	
2/20/2019	Eye	Langdon Ch 12	<b>Quiz 3</b>
2/22/2019	Eye	Langdon Ch 12	
2/25/2019	Brain anatomy	Langdon Ch 10	
2/27/2019	Brain evolution	Langdon Ch 10	
3/1/2019	Ear and Nose	Langdon Ch 12	
3/4/2019	Ear and Nose	Langdon Ch 12	<b>Quiz 4</b>
3/6/2019	Ear and Nose	Langdon Ch 12	
3/8/2019	Masticatory system	Langdon Ch 4 and 5	
3/11/2019	Masticatory evolution	Langdon Ch 4 and 5	
3/13/2019	Unit 2 Review		
3/15/2019	<b>Exam 2</b>		
3/18/2019	<b>NO CLASS- SPRING BREAK!</b>		
3/20/2019			
3/22/2019			
3/25/2019	The gut	Langdon Ch 14	
3/27/2019	Respiratory system	Langdon Ch 15	
3/29/2019	<b>NO CLASS- AAPAs</b>		
4/1/2019	Cardiovascular system	Langdon Ch 16	
4/3/2019	Cardiovascular system	Langdon Ch 16	
4/5/2019	Excretion and homeostasis	Langdon Ch 13, 17, 18	
4/8/2019	Reproductive organs	Langdon Ch 19	<b>Quiz 5</b>
4/10/2019	Reproductive organs	Langdon Ch 19	
4/12/2019	Axial skeleton and the tail	Langdon Ch 6	
4/15/2019	Limbs overview/ biomechanics refresher	Langdon Ch 3	
4/17/2019	Upper limb	Langdon Ch 7	
4/19/2019	Upper limb	Langdon Ch 7	
4/22/2019	Lower limb	Langdon Ch 8 and 9	<b>Quiz 6</b>
4/24/2019	Lower limb	Langdon Ch 8 and 9	
4/26/2019	Limb evolution	Langdon Ch 7-9	
4/29/2019	Unit 3 Review		
5/1/2019	<b>Anatomy Challenge!</b>		
TBA	<b>Exam 3 ( During Final Exam Period)</b>		