8.9.21

HEB 1404: Human Adaptation

Fall 2021

Wednesday 9:45-11:45am, MCZ 541

Neil Roach (ntroach@fas.harvard.edu)
Office Hours: by appointment
Prerequisites: none

Course description

Humans are weird primates. We walk on two legs, are ferocious predators, live in groups that help us thrive but challenge our health, cook our food and are incredibly reliant on technology. This course introduces students to human origins and ongoing debates about how natural selection shaped our past and alters our world today. We focus our discussions on major transitions in our sexual, dietary, and technological behaviors, as well as how evolutionary forces shape our responses to disease and pattern variations in skin color, body form and physiology.

Course Aims and Objectives

This course has multiple aims. First, you will expand on your knowledge of human evolution and how natural selection has shaped our species. Second, you will gain exposure to how researchers address questions about human evolution and biology. We will read scientific papers, interpret them and gain experience interrogating and communicating science in writing and verbally.

The course is designed at an introductory level. Even so, human evolution is filled with many species, dates, and localities. Memorizing this information is not the focus of this course, but you will be asked to familiarize yourself with this material and use the details of our evolutionary history to make your arguments in class and in your papers.

I don't expect that you'll immediately understand everything you read. However, I do expect all students to actively participate in discussions. In class, we'll talk through the papers carefully and I'll help plug holes in your knowledge.

Course Materials

Course readings will primarily consist of scientific papers. We will read approximately 3-4 papers each week. All readings will be available through the Canvas site.

Assignments and Grading

The course is divided into the major adaptive transitions that occurred in our lineage

over the last seven million years. In preparation for each weeks' class, you will be asked to write short questions identifying the key concepts and remaining challenges of each paper. These key questions will be due prior to the class meeting.

Our weekly topics will also form the basis for three short papers written during the semester that account for the bulk of your course grade. The topics of those papers are:

Paper 1: *How do we study adaptations in the past?* (5-7 pages)
Paper 2: *An interrogation of a major adaptive shift in human evolution* (5-7 pages)
Paper 3: *How do adaptive pathways alter the course of our evolutionary history and affect our modern lives and health* (8-10 pages)

As part of the learning process, it is my hope that each paper will build on cumulative knowledge and information from the earlier papers. This will allow you a chance to edit yourself, refine your thinking and fully master a topic that interests you. Detained information on the timing of each paper can be found at the end of this syllabus.

Grading breakdown
Weekly questions: 10%
Paper 1: 20%
Paper 2: 25%
Paper 3: 30%
Class participation: 15%

Course Policies and Expectations

Because attendance is critical to the learning process in this class, it is required. If you need to miss a class meeting for a legitimate reason, please let me know at least a week beforehand. Absences due to health require UHS documentation. Late papers assignments will be penalized 10% a day starting at the time the paper is due. Late weekly questions will not be accepted.

Weekly key questions and are due at 11:59 pm on the night before the class meeting. Papers are due at 9:45am (class meeting time).

Academic Integrity and Collaboration

Harvard's Honor Code states: *Members of the Harvard College community commit themselves to producing academic work of integrity – that is, work that adheres to the scholarly and intellectual standards of accurate attribution of sources, appropriate collection*

and use of data, and transparent acknowledgement of the contribution of others to their ideas, discoveries, interpretations, and conclusions. Cheating on exams or problem sets, plagiarizing or misrepresenting the ideas or language of someone else as one's own, falsifying data, or any other instance of academic dishonesty violates the standards of our community, as well as the standards of the wider world of learning and affairs.

For written assignments in this course, you may consult with your classmates on source material. You may exchange ideas about your topics, however, you should ensure that any written work you submit is the result of your own research and writing and that it reflects your own approach to the topic. You must adhere to standard citation practices and properly cite any books, articles, or websites that have helped you with your work. If you received any help with your writing you must acknowledge this assistance as well.

Accommodations for students with disabilities

Students needing academic adjustments or accommodations because of a documented disability must present their Faculty Letter from the Accessible Education Office (AEO) and speak with the professor by the end of the second week of the term. Failure to do so may result in an inability to respond in a timely manner. All discussions will remain confidential, although faculty are invited to contact AEO to discuss appropriate implementation.

Course Outline

September 8: Introduction/Who are we?
September 15: What is an adaptation?
September 22: A bipedal ape and a changing world
September 29: Crummy food and simple tools ***(Paper 1 due)***
October 6: Sex, survival and sociality
October 13: Climate change
October 20: Carnivory and cooking
October 27: The evolving athlete ***(Paper 2 due)***
November 3: Conquering the world
November 10: Tools, brains and babies
November 17: High altitude and high latitude
November 24: ***No class***
December 1: Adaptations today
December 8: ***Final paper due (9:45am)***