

University of Southern California Spring 2022

**Human Biology (HBIO) 406 Theory and Methods in Human Evolutionary Biology
Focus: Exercise, Physical Activity, and Evolutionary Medicine**

Time & Location: Monday 2-4:50

Professor: Dr. David Raichlen

Email: draichle@usc.edu

Office Hours: T 2:00 PM – 4:00 PM or by appointment

Course Description: The goal of this course is for you to obtain a clear knowledge of the theories and methods used to understand human evolution. This course will focus on how we can use our understanding of human evolution to improve health and well-being today. Today, many chronic diseases, especially those we experience during aging, are related, in part, to lifestyle behaviors. This course will use an evolutionary perspective to understand how and why lifestyle diseases are so common today and what we can do about it. Much of our discussion will revolve around the evolutionary role of exercise and physical activity in human health and disease. The format of the course is discussion, and we will work our way through one book and several research articles that link our evolutionary history to health and well-being.

Course Objectives:

- Develop a deeper comprehension of the central and cross-disciplinary concepts of human evolutionary biology
- Understand and apply the scientific method and develop critical thinking skills within an evolutionary framework
- Effectively communicate evolutionary principles regarding human biology through in class discussions.
- Discuss how biology can contribute to the resolution of ethical, social, and environmental issues.

Required Books:

Lieberman, D. (2014). *The story of the human body: evolution, health, and disease*. Vintage.

Grading:

25% - Participation in seminar discussions

10% - Summaries of discussion

35% - Moderation of discussion

10% Literature search for discussion material

15% Powerpoints/presentation of material

10% Prepared questions

30% - Term paper

Literature search for discussion material: A major skill to master in research is finding appropriate literature to use in research and be able to critically review and

discuss it. You are given the objective to find a primary research article for one of the specified discussion sessions. Further instructions will be provided.

Discussion Sessions: Discussion sessions have three components to complete. The first is that each of you will (1) moderate sessions during the semester. This means leading the discussion by offering your critical evaluations of the assigned readings. You will also prepare a powerpoint presentation describing the main points of the papers you choose to have the class read. This does not mean simply rephrasing or summarizing the content of the papers. It is highly recommended that you develop specific discussion questions. Second, everyone will be graded individually on their (2) participation during discussions and all students **MUST** read the assigned articles. Finally, each meeting will have one person charged with (3) summarizing the important points of the discussion that day. This should generally not be longer than a page (single-spaced). Summarizers should link ideas and views with the people who offered them. The summarizer should identify and highlight the following: the 3 most important ideas presented (and explain why) and the best quote of the day (linked to the person who generated it). The summary is due the Monday following the discussion.

Term Paper: A term paper will be due on the last day of class meeting. The paper must be 4-6 pages, double-spaced, and is on a topic of your choosing. The topic must be one linked with the overall theme of this class: linking evolutionary biology with a health-related topic. The topic must be approved by Dr. Raichlen (see schedule below). In your paper, you must describe an aspect of human health, how evolutionary theory can help us understand its origins or treatments, and discuss the specific methods used to link evolution and health for that disease.

Absence: If you have a legitimate (documented) reason for an absence on a discussion day, please contact me within 24 hours of the class to discuss a make-up option for your participation points. Unexcused absences will result in a grade of zero.

Late Assignments: Students who submit work up to one week late will receive a penalty of 10% applied to the grade achieved on the late assignment regardless of the day of the week on which the work is submitted.

Schedule (*subject to revision*)

In calendar below, SOHB is Story of the Human Body

Date	Topic
1/10/22	Intro to course
1/17/22	MLK day – no class
1/24/22	What are humans adapted for? Read: Chapter 1 SOHB
1/31/22	Evolution of Bipedalism Read: Chapter 2 SOHB Read: Ward 2013
2/7/22	Diet and human evolution Read: Chapter 3 SOHB Read: Breslin 2013
2/21/22	President’s day – no class
2/28/22	Hunting and gathering lifestyle Read: Chapter 4 SOHB Read: TBA
3/7/22	Energetics and Big Brains Read: Chapter 5 SOHB Read: TBA
3/14/22	Spring Break – no class
3/21/22	Culture and colonization Read: Chapter 6 SOHB Read: TBA TERM PAPER TOPIC DUE
3/28/22	Progress, mismatch, and dysevolution Read: Chapter 7 SOHB Read: TBA
4/4/22	Trade-offs with agriculture Read: Chapter 8 SOHB Read: TBA
4/11/22	Life and health in industrialized societies Read: Chapter 9 SOHB Read: TBA
4/18/22	Dangers of too much energy Read: Chapter 10 SOHB Read: TBA
4/25/22	Dangers of inactivity Read: Chapter 11 & 12 SOHB Read: TBA Term Paper Due

Note that topics and readings for a given day and week are subject to change. You will be notified prior to any changes made in this schedule.

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Student Health Counseling Services - (213) 740-7711 – 24/7 on call
engemannshc.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 – 24/7 on call
engemannshc.usc.edu/rsvp

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) | Title IX - (213) 740-5086
equity.usc.edu, titleix.usc.edu

Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

Bias Assessment Response and Support - (213) 740-2421

studentaffairs.usc.edu/bias-assessment-response-support

Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

The Office of Disability Services and Programs - (213) 740-0776

dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710

studentaffairs.usc.edu/ssa

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.