

Syllabus: HBIO 300 – Evolution, Ecology, and Culture (4 units)

Instructor: Dr. Michael C. Campbell

Course Meeting: Mondays 4:00 pm–6:50 pm (except on Labor Day)

Location: Dr. Joseph Medicine Crow Center for International and Public Affairs (DMC)

Office: AHF B10E

Email: mc44680@usc.edu (best method of contact)

Office Hours: Tuesdays 11:30 am–1:00 pm in AHF B10E

COURSE DESCRIPTION:

This course centers around the fundamental premise that human biology is the outcome of a complex interplay among genetics, evolution, and cultural practices. Intriguingly, while the interplay among these factors can vary among human populations, we cannot truly separate this intricate web of population-level phenomena which have shaped human biology over millennia. This course will cover a range of topics, such as human adaptations to diet, the biology of emerging infectious disease, defense against disease, and evolutionary insights into the development of simple/complex disease.



In addition, a major goal of this class is to expose students to critical thinking about the world they live in and the information they are presented with in their daily lives. Armed with this ability, students will finish the course with a broader perspective on the biology of humans.

RECOMMENDED TEXTBOOKS:

1. Douglas J. Futuyma and Mark Kirkpatrick 2017. *Evolution* 4th Edition. Sinauer Associates, Inc. Sunderland, MA, USA.
2. Stephen C. Stearns and Ruslan Medzhitov. 2015. *Evolutionary Medicine*. Sinauer Associates, Massachusetts.
3. M. Joblin, E. Hollox, M. Hurles, T. Kivisild and C. Tyler-Smith: 2013. *Human Evolutionary Genetics*. Garland Science, New York

These textbooks can be purchased online and are available as a hardcover, softcover, or e-book.

LEARNING OBJECTIVES: Within the framework outlined in the goals for this course, there are several objectives that will be achieved through a combination of lectures, readings, and class activities (group and individual). By the end of the course, you should be able to:

1. Understand evolutionary thinking which is the unifying principle of all biology.
2. Understand the mechanisms by which ancestral human populations evolved, giving rise to contemporary levels and patterns of human diversity.
3. Engage in critical thinking to advance our current understanding of human biology.
4. Communicate knowledge acquired in this course both orally and in writing.

TECHNOLOGICAL PROFICIENCY AND HARDWARE/SOFTWARE REQUIRED:

1. Because the possibility always exists that we will have to go back to virtual classes, you should have an

internet-enabled device with browser capabilities, such as a tablet or laptop/desktop computer.

2. This course requires the use of Blackboard whether the class will be in person or virtual. Blackboard will be your gateway to access your grades, syllabus, assignments, and provided links. Blackboard will also be the repository of lecture slides and all of your written work.
3. This course also requires the use of Microsoft Word and/or PowerPoint.
4. USC Technology Rental Program (<https://itservices.usc.edu/spaces/laptoploaner/>): Students who need resources in order to participate in this class can apply to the university's equipment rental program. The Student Basic Needs team will work with you to distribute equipment (if you are eligible). Please visit <https://studentbasicneeds.usc.edu/resources/technology-assistance/> to apply and for more information.

EXPECTATIONS:

All students are expected to...

1. Be **on time** and prepared for all classes. Occasionally things happen beyond your control. However, you are expected to be punctual so as to fully utilize the time we have available.
2. Be responsible for your own mastery of the material. If you do not understand concepts or ideas presented in assignments, activities, or lectures, the instructor is here to support your learning, but it is up to you to seek help.
3. Provide sufficient notice to the instructor if you are going to be absent for a legitimate reason.
4. Be responsible for the material missed due to absences (please do not email the instructor asking if you missed anything important – check with your fellow classmates).
5. Actively participate in class activities, discussions, and projects.
6. To promote a respectful, professional, and productive classroom environment, the following expectations will be maintained during all class sessions:
 - a. do not interrupt when someone else is speaking.
 - b. you can criticize ideas, but not people.
 - c. avoid inflammatory language.
 - d. either support assertions with evidence or speak from personal experience.
 - e. do not dominate the discussion.
 - f. make a single point each time you speak, rather than making a series of statements at once.

All students can expect ...

1. Class to begin on time.
2. The instructor to arrange to meet with students by appointment in lieu of established office hours.
3. To improve written and oral communication skills.
4. A classroom environment that is conducive to learning, challenging and engaging.
5. To improve critical thinking skills and the use of scientific principles for learning.
6. To be engaged with the material presented in class through multiple pedagogical styles that include mini lectures, group work, literature discussion, student presentations, and more.

TECHNOLOGY IN THE CLASSROOM: You may use personal electronic devices (laptops, iPads) for academic purposes directly related to the class. Students using a device for purposes not directly related to the class will be required to put the device away. There are times when I will request that all devices are put away to ensure focus on class activities. Please turn off or disable all cell phones or other electronic communication devices during class time.

TEACHING APPROACH: My teaching approach is designed to facilitate a collaborative, learner-centered environment where you, the student, engage in learning the material through active participation in activities,

discussions, and presentations. This approach is designed to allow you to take a self-directed approach to developing an understanding of the material, rather than relying on the instructor as the primary source of knowledge. You will engage in a variety of classroom activities (*e.g.*, lectures, group problem solving, writing) that allow each student to make use of their diverse backgrounds and distinctive learning styles. Activities and the concepts learned through them are emphasized and reviewed in lectures, encouraging students to think about the material.

POLICY ON SHARING OF COURSE MATERIALS: USC has a strict policy (SCampus Section 11.12[B]) that prohibits sharing of any synchronous and asynchronous course content outside of the learning environment (*e.g.*, Chegg and Coursehero). Any student who violates this policy will be prosecuted to the maximum extent allowable by the USC Student Conduct Code, including a failed grade in the course and suspension from the University.

ASSESSMENT OF PERFORMANCE:

GRADING: Grades will be based on **participation, assignments (in class and homework), presentations, and a research proposal**. Your final grade will be determined using the following scale:

A	94-100
A-	90-93.99
B+	87-89.99
B	83-86.99
B-	80-82.99
C+	77-79.99
C	73-76.99
C-	70-72.99
D+	67-69.99
D	63-66.99
D-	60-62.99
F	≤59.9%

Grades will be determined based on the following breakdown:

15%	In-class Activities (impromptu Knowledge Checks and Group Work)
15%	Writing Assignments
20%	Student Presentations
50%	Exams (Exams I and II, 25% each)

IN-CLASS ACTIVITIES: Both are integral to your success in this class. Asking and answering questions is expected and required. Beyond the obvious benefits that being in class have on a student's understanding of the material, in-class activities (such as, knowledge checks and group work) are a way you will be assessed in this class. No matter the reason (excused or not), **you are responsible for all work missed** in your absence, and you should immediately **contact a classmate** to find out what you have missed.

WRITING ASSIGNMENTS: There will be writing assignments during the semester. These assignments will be given in class and will be due on December 15th during the final examination period. You will upload them to Brightspace.

PRESENTATIONS: Students will be assigned to one of three groups made up of ~12 individuals (depending on class size) the week of September 22nd. The guidelines for the presentations also will be discussed in detail this same week. All group members will work collaboratively to research, organize, and present their assigned topic. Please see lecture schedule at the end of the syllabus for the dates of the student presentations.

EXAMS: There will be two exams that will consist of multiple choice, short answer questions, and short answer questions, including problem sets. Exam 1 will cover the history of evolutionary thought, mutation and variation, human evolution, finding and assaying human genomic diversity, and global distribution of human diversity, Exam 2 material will cover all lecture material discussed after Exam 1 (*i.e.*, Exam II is not cumulative).

Exams can be taken after the specified date **ONLY** if the student has a **documented** excuse. A request to make-up a missed exam must be accompanied by evidence of necessity (illness, travel with a USC team). Make-up exams will be different from the scheduled exam and will be proctored by different personnel.

2% EXTRA CREDITS VIA SEMINAR ATTENDANCE: If you decide to do this option for extra credit, **you must send an email to Dr. Campbell by September 22nd** to let him know of your decision.

1. **Seminar attendance:** An extra credit option of maximum 2% will also be available by attending **four** research seminars either on UPC or on HSC (This 2% will be added to the Participation component of your grade). **Two (2) of those seminars should be HBIO seminars.** The seminars should be related to some aspect of biology or physiology. For each seminar, students will have to attend the seminar and write a 1-page summary of what was presented by the researcher. **The 1-page summary should include an introduction, an organized summary of the research presented and a conclusion.** For each seminar attended and 1-page summary submitted, students will be given up to 0.5% for a grand total of 2% points (for 4 attended seminars). Summaries **MUST** be emailed to the instructor **within 1 week after the seminar.** Students must clearly explain which seminar was attended.

ACADEMIC CONDUCT: Attempts to discredit the system of evaluation (*e.g.*, plagiarism on an assignment, or fabricating an excuse for missing class) are serious. Academic dishonesty will be reported in writing to the Department Chair and to the Dean of the College. Students are encouraged to read the SCampus in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. **ACADEMIC DISHONESTY WILL NOT BE TOLERATED.**

Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, <https://policy.usc.edu/?s=scientific+misconduct>.

ACADEMIC SUPPORTS: Students who require additional academic support can access it through the services listed below. Please note that this is not an exhaustive list, and I am happy to assist with finding other needed support.

- a) **Student Health Counseling Services.** Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. Contact: (213) 740-7711 – 24/7 on call; <https://studenthealth.usc.edu/>
- b) **Office of Student Accessibility Services.** 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. Contact: (213) 740-0776; <https://osas.usc.edu/>
- c) **National Suicide Prevention Lifeline.** Free and confidential emotional support to people in suicidal crisis or emotional distress (24 hours a day, 7 days a week). Contact: 1 (800) 273-8255 – 24/7 on call; <https://988lifeline.org/>
- d) **Relationship and Sexual Violence Prevention Services (RSVP).** Free and confidential therapy services, workshops, and training for situations related to gender-based harm. Contact: (213) 740-4900 – 24/7 on call; <https://studenthealth.usc.edu/>
- e) **Office of Equity and Diversity (OED) | Title IX.** 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. Contact: (213) 740-5086; <https://eeotix.usc.edu/>

- f) **Bias Assessment Response and Support.** Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response. Contact: (213) 740-2421; <https://gero.usc.edu/students/current-students/resources-for-finding-support/>
- g) **USC Support and Advocacy.** Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student. Contact: (213) 821-4710; <https://studentlife.usc.edu/>
- h) **Diversity at USC.** 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. Contact: (213) 740-2101; <https://culturejourney.usc.edu/>

CONTACTING THE INSTRUCTOR: The best means of contacting the instructor is via email. If you email me, I will generally respond within 24 hours. However, I generally do not respond to emails over the weekend or after 5:00 pm. I want to be available to help students get the most out of the class, and I maintain an open-door policy so that students feel free to seek out help as needed. Outside of office hours, **if I am in my office, I may be available** for a **brief** visit and to help with simple questions. However, if I am not in my office, please come during office hours or make an appointment.

BLACKBOARD: The instructor will place the syllabus, schedule, assignments, and other relevant material on **Blackboard**.

HBIO 300 LECTURE SCHEDULE

[subject to revision – revised March 06, 2025.]

Monday 4:00 pm – 6:50 pm ([DMC 252](#))

WEEK	DATE	TOPIC	TEXTBOOK READINGS
1	08/25/25	Introduction to HBIO 300	
2	09/01/25	How an idea changed the world	Futuyma (Chapter 1)
3	09/08/25	LABOR DAY—NO CLASS	
4	09/15/25	Mutation and variation	Futuyma (Chapter 4)
5	09/22/25	The evolutionary story of Homo sapiens	Futuyma (Chapter 21)
6	09/29/25	Finding and assaying human genomic diversity	Jobling (pp. 43-64;81-88; 95-112;119;123)
7	10/06/25	Global distribution of human diversity	Stearns (pp. 313-339)
8	10/13/25	EXAM I	
9	10/20/25	Neutral and adaptive evolution	Futuyma (Chapters 3, 5 and 7)
10	10/27/25	What is disease and the types of defense against it?	Stearns (pp. 87-100; 101-120)
11	11/03/25	Benefits and costs of defense against/the evolution and expression of virulence STUDENT PRESENTATION	Stearns (pp. 120-137; 139-145; 151-157)

12	11/10/25	Symbiotic host-pathogen relationship/the rise of drug-resistant pathogens STUDENT PRESENTATION	Stearns (pp.146-151; 157-166)
13	11/17/25	Mismatches to modern environments/Individual health versus populations health STUDENT PRESENTATION	Stearns (pp. 219-237;243-266)
14	11/24/25	Evolutionary insights into simple genetic and complex disease	Jobling (Chapters 16 and 17)
15	12/01/25	EXAM II	