

**Environmental Studies**  
**ENV 153 – THE DEEP HISTORY OF CLIMATE ADAPTATION**  
**Spring 2024**



The challenges of global climate change require creative responses: where can we look for inspiration? Through the lens of the paleosciences, we can explore the history of human-environment interactions stretching back to the origins of humankind. What can be learned from that history, and what makes contemporary challenges unique? This course examines the global history of human adaptation to climate change over the last 1 million years. Students will learn what different sources of paleoclimatological and paleoenvironmental data, from tree rings to stable isotopes, tell us about past ecosystems and climates, and how interdisciplinary approaches bridging the earth, life, and social sciences help us understand our ancestors' responses. We will also explore the complex adaptive systems that emerged amidst shifts in environmental conditions and large-scale disruptions in the past, and how these reflect on contemporary issues such as inequality, sustainability, and food/water security. Finally, we will explore the potential and challenges of applying information from the past to plan for the future, drawing on cases from recent history and current research. By the end of the course, students will be able to critically assess climate history and data, identify key theories and ideas about past human environment interactions, and situate present-day climate change adaptation challenges and opportunities within a deep historical context.

**Meeting times**

Tuesdays 4:30 – 5:45PM, Bromfield Pearson 007

Thursdays 4:30 – 5:45PM, Bromfield Pearson 007

Tufts University is located on colonized Wôpanâak (Wampanoag) and Massachusetts Tribal lands.

## **Course Structure**

Lectures are held twice per week for 75 minutes. The course is divided roughly into three sections. The first section will introduce you to the methods and theories of the paleosciences, particularly archaeology, paleoecology, and paleoclimatology. This will provide you with core knowledge for interpreting the evidence for human-environmental interactions. The second section will focus on climate change and the variety of human responses in the past, moving through time from our origins in Africa over 2 million years ago to the near present. A series of cases will be used to illustrate key concepts regarding human behavioral change, climate and other environmental drivers, and the evidence used to identify them. The final section of the course will look at different roles played by the study of the past in the present, examining climate threats to the archaeological record, compare adaptations then and now, and explore how records from the past help us contextualize current challenges.

Rooms and times may be subject to change. Please consult Tufts Student Information System (SIS) for up-to-date information. Any changes to the course structure as listed in this syllabus will be announced on Canvas.

## **Course Instructor**

Ben Davies

benjamin.davies@tufts.edu

Bromfield Pearson 203

Office hours: Fridays 10 - 11AM (virtual) or by appointment

## **Course Readings**

Each week has associated readings available through Canvas that students are expected to read **before the Tuesday recitation**. These readings have been chosen to enhance your understanding of the course topics, facilitate discussions for that week and assist you as you prepare your assignments. Reading them in advance will greatly enhance your learning through attending class, and some of the material in the readings will be used to complete course assignments.

## **Course Communications**

Most course communications will take place using Canvas and your university email account. Please ensure that your correct e-mail address is in the system and that your inbox is not full. Failure to read a message will not be accepted as a reason for failure to perform.

## **Course Assessment**

Final grades in this course are based on your performance on a series of assignments. Brief descriptions on the assignments can be found below; more detailed descriptions and grading criteria are available on Canvas.

<b>Assessment</b>	<b>Weight</b>	<b>Due date(s)</b>	<b>Week number</b>
Core Knowledge Quizzes	20%	Mondays	Weeks 2 - 6
Dating Assignment	10%	Variable	Variable
Adaptation Site Database	15%	Mondays	Weeks 7 - 9
Case Study Presentation	20%	Tuesday 26 <sup>th</sup> Mar	Week 10
Reading Reflections	15%	Tuesdays & Thursdays	Weeks 11 - 14
Final Project	20%	Wednesday, May 1 <sup>st</sup>	Week 15

### *In-Class Activities (10%)*

Throughout the course there will be a set of short, hands-on activities that take place in-class (although some may require some data or materials to be gathered prior to the session), focused on interpreting evidence from the past. Each will be worth 2 points, for a total of 10 points.

### *Core Knowledge Quizzes (20%)*

During the first section of the course (weeks 2 through 6), we will be focusing on understanding the methods and theories used in the paleosciences to interpret the human and environmental past. Each week, a short quiz will be given on Canvas to be completed by the following Monday night. These quizzes are aimed at assessing your growing knowledge of the paleosciences and help identify areas that may need additional study.

### *Climate Change Adaptations Database (15%)*

The second section of the course (weeks 7 through 9) is aimed at building your understanding of the diversity of expressions that climate change and human adaptation have taken over time. For this assignment, you will help construct an annotated database of publications about archaeological studies featuring climate change impacts or adaptations. This assignment will develop critical research skills and help you become more familiar with the temporal and spatial structure of the human past. The database will then be available for use for other coursework.

### *Case Study Presentations (20%)*

For this assignment, you will present on a case study dealing with an instance of human adaptation to climate change from a time and place of your choosing. The case study (typically but not exclusively drawn from published research) must include background on the historical context of the case, the prevailing climate conditions and their effects on human environments, and critical consideration of the evidence used to support the interpretation. Case studies must be cleared with the lecturer by Week 8. Presentations will be 5 minutes long, and take place during class on March 26th and 28th.

### *Reading reflections (15%)*

During the third section of the course (weeks 11 through 14), we will look broadly and critically at the relationship between past and present. Each week, unless otherwise indicated, you will submit a short reflection about the weekly readings, and these will be used as prompts to guide in-class discussion. These might include questions you have, things that struck you as interesting, or critical insights. You are encouraged to draw on current events, things you have learned in other classes, and your own experiences when writing these reflections.

### *Final project (20%)*

For the final project of this course, you will write a paper discussing contemporary climate adaptations in a longer-term context, weighing the strengths and weakness of drawing on the past to understand the present. Using multiple cases, your paper will make arguments about what makes contemporary challenges similar and different from the past, and how to best integrate knowledge from the paleosciences and cultural heritage values in our adaptations to the contemporary climate crisis.

### *Submitting assignments*

All assignments must be submitted in digital format via the course Canvas page unless otherwise indicated.

### *Extensions and late assignments*

This course has assignments due at regular intervals, and students are advised to submit assignments on time to avoid becoming overwhelmed with work. Students will be given time to work on assignments during recitation sessions, and should reach out to the instructor and teaching assistant for guidance and technical assistance if needed. **If an extension on an assignment due date is needed, please contact the instructor as soon as possible.** Extensions will be given in cases where there is a relevant and valid reason for your inability to complete the assignment on time – usually illness, accident, or bereavement. Reasonable accommodations will be sought, but the duration of any extension is ultimately at the discretion of the instructor. Assignments submitted late without an extension will be issued a grade penalty.

## **Course Policies**

### *Academic integrity*

Academic Integrity Policy: Tufts holds its students strictly accountable for adherence to academic integrity. It is critical that you understand the requirements of ethical behavior and academic work as described in Tufts' Academic Integrity handbook. If you ever have a question about the expectations concerning a particular assignment or project in this course, be sure to ask for clarification.

Tufts Libraries has a helpful web resource, **Research Guides@Tufts**, that can help if you have questions about plagiarism and proper attribution.

Plagiarism: <https://researchguides.library.tufts.edu/plagiarism>

Citation Support: <https://researchguides.library.tufts.edu/citation>

### *Accommodations for students with disabilities*

Tufts is committed to providing equal access and support to all qualified students through the provision of reasonable accommodations. If you have a disability that requires reasonable accommodations, contact the StAAR Center at [StaarCenter@tufts.edu](mailto:StaarCenter@tufts.edu) or 617-627-4539.

### *Religious accommodations*

Tufts University faculty, staff, and administration highly value and acknowledge the religious diversity of its student body. Students seeking religious accommodations related to their holy days are encouraged to collaborate with faculty to make arrangements during the first week of each semester.