

## ANTH 50.05 Environmental Archaeology Spring 2020

**Professor Ryan H. Collins**

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**Office:** A studio in Boston (Usually 316 Silsby)

**Office Hours:** T+TH 6 – 7pm EDT; By appointment

**Teaching Fellow Elise J. Laugier**

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**Office:** By Way of Houston, Texas

**Office Hours:** W, F 12:45-1:30pm EDT



“Man selects only for his own good: Nature only for that of the being which she tends.” – Charles Darwin (1861)

Given our present moment geologically marked by human impact on the planet, this class explores how human history and prehistory have been defined by moments when political, cultural, economic, and ecological systems intersect or collide. We will seek to understand how various people’s everyday lives and realities have connected to large-scale processes, at times culminating in turning points such as catastrophe and societal collapse. Using archaeological sciences and anthropological analysis, alongside material records and data as well as ethnographic encounters and historical accounts, we will explore archaeological tools for approaching, contextualizing, and better understanding these entangled issues. Key topics will include climate change, food systems, plant and animal relations, water management, mining, fossil fuels, epidemics, garbage, war, and extinctions.

## MEETING TIMES AND LOCATION

**\*\*\*Zoom sessions are held during the 11 Block; recorded lessons on Canvas for asynchronous viewing.\*\*\***

### **ANTH 50.05 Environmental Archaeology Class Meeting and Office Hours**

(Monday / Wednesday / Fridays, 11:30am - 1:00pm EDT through May 29)

*\*Class lecture ends at 12:35 pm, subsequent 25 minutes are reserved for drop-in office hours*

Join URL: <https://dartmouth.zoom.us/j/386093947>

Meeting ID

386-093-947

### **Professor Collins Office Hours**

(Tuesdays / Thursdays, 6-7 pm EDT, through May 28<sup>th</sup>)

*\*Advance registration is required. Zoom link is automatically emailed to registrants after they sign up. To ensure privacy, students will be kept in a virtual "waiting room" until the instructor is ready to let the next student in.*

Registration URL:

<https://dartmouth.zoom.us/meeting/register/vJluc-6ppz0tPrOeFjHRjMpDG6OEACpXYQ>

Meeting ID

163-471-967

### **Elise Laugier Office Hours**

(Wednesdays / Fridays 12:45-1:30pm EDT, through May 28<sup>th</sup>)

Registration URL:

<https://dartmouth.zoom.us/j/454969342>

*\*While the class will be held live for ZOOM sessions during the 11 Block EDT time, the administration and I recognize that this is not possible for many students who are in restrictive time zones. As such, class lectures and discussion will be recorded via Zoom and hosted on Canvas thereafter for asynchronous attendance. In addition, I will be offering open "office hours" twice a week on Tuesdays and Thursdays from 6:00 to 7:00 pm EDT for students who cannot make it to class in real-time. These Tuesday and Thursday sessions are intended to facilitate additive discussion and to review items covered in the lecture sessions or readings if time permits. I am always available by way of appointment to meet with students individually over Zoom.*

### **RESPONSE TO EMAILS (*Prioritizing Health and Wellbeing*)**

Because this class is asynchronous and hosts students in several time zones around the globe, I expect flexibility and autonomy with when and how students work. The world is your oyster! But, the "always-on" nature of the coursework, does make it important for one to establish boundaries for health and wellbeing. That being said, emails received by me on Mondays through Fridays between the hours of 8:00 am, and 8:00 pm EDT will receive priority on a given day. Within this 12-hour window, you can expect a response in most cases within a half-hour to one-hours' time. Emails received by me outside of that window can expect a response when the next window opens (usually the next day). Know that I am happy to respond to emails, questions, or concerns over the weekend. I am even happy to host appointment office hours. But my response times will vary on weekends as prioritize time to disconnect from the computer, enjoy a long-distance run, or explore remote trails out in nature. Students may wish to schedule in their own time for wellness (and I encourage you to do so).

## LEARNING OBJECTIVES

- Establish a baseline understanding of the primary goals and methods of Environmental Archaeology as a discipline
- Provide archaeological tools for approaching and contextualizing environmental science data within broader social, historical, economic and political landscapes
- Refine student abilities to connect micro-scale realities, facts and details to large-scale environmental and geo-political processes
- Improve students' ability to engage scientific data and academic sources through a critical but balanced lens, via regular written reading discussions.

### Week 1: Environmental Archaeology – Introductions to the Anthropocene

**3/30 - Session 1:** Overview – Methods (Our Tool Kits) + Case Studies

**4/1 - Session 2:** Case Study: The Anthropocene

**Session 2 Readings:** (1) Kintigh, K. et al. 2014. "Grand Challenges for Archaeology." PNAS 111(3): 879-880. (2) Chapter 7 of The Archaeology of Environmental Change, "What Difference Does Environmental Degradation Make? Change and Its Significance in Transjordan" by J. Brett Hill

**4/3 - Session 3:** Lab/Exercise – Garbology

**Session 3 Readings:** (1) Newman, S. 2019 "Rubbish, Reuse, and Ritual at the Ancient Maya Site of El Zotz, Guatemala ." Journal of Archaeological Method and Theory (2019) 26:806–843; (2) Lehmann, L. V. 2015 "The Garbage Project Revisited: From a 20th Century Archaeology of Food Waste to a Contemporary Study of Food Packaging Waste."

### Week 2: Environmental Systems

**Video:** On Interpreting Paleoclimate: Lecture by Sturt Manning: (<https://www.youtube.com/watch?v=JD-MSrgPdFQ>).

**Podcast:** BBC Radio 4's In Our Time: History – The Bronze Age Collapse  
<https://www.bbc.co.uk/programmes/b07fl5bh>

**4/6 - Session 4:** Topic + Methods – Carrying Capacities and Quantifying Material Footprints

**Session 3 Readings:** (1) Chapter 2 of The Archaeology of Environmental Change, "What Is an "Environmental Crisis" to an Archaeologist?" by Sander E. van der Leeuw; (2) Prologue in Jared Diamond's "Collapse."

**4/8 - Session 5:** Case Study – Collapse + Resilience

**Session 4 Readings:** (1) Mieth, A., and Hans-Rudolf Bork. 2010. "Humans, climate or introduced rats – which is to blame for the woodland destruction on prehistoric Rapa Nui (Easter Island)? Journal of Archaeological Science 37:417–426.; (2) Chapter 3 in Jared Diamond's "Collapse."

**4/10 - Session 6:** Lab/Exercise: Tell Leilan Collapse-Resilience Simulation & the 4.2kyBP event

**Session 5 Readings:** Buckley, B.M., et al. 2010. "Climate as a Contributing Factor in the Demise of Angkor, Cambodia." Proceedings of the National Academy of Sciences of the United States of America 107(15):

6748–6752. (2) Middleton, G.D., 2012. Nothing Lasts Forever: Environmental Discourses on the Collapse of Past Societies. *J Archaeol Res* 20, 257–307. <https://doi.org/10.1007/s10814-011-9054-1>

### Week 3: The Long Durée – Reconstructing Paleoenvironments

**Video:** In focus: Ötzi “The Iceman.” (2016: 25th Anniversary, Archaeosoup). <https://youtu.be/bZr-uAOJqo4>

**4/13 - Session 7:** Topic + Methods – Disentangling Climate, Environment, and Weather and Spectrums of Climate Change

**Session 7 Readings:** Bishop, R.R., M.J. Church, and P.A. Rowley-Conwy. 2015. “Firewood, food, and human niche construction: the potential role of Mesolithic hunter-gatherers in actively structuring Scotland's woodlands.” *Quaternary Science Reviews* 108:51-75.

**4/15 - Session 8:** Case Study – How Climate Impacts Evolution - Climate Stability at the Holocene

**Session 8 Readings:** Chapter 9 of *The Archaeology of Environmental Change*, “Social Changes Triggered by the Younger Dryas and the Early Holocene Climatic Fluctuations in the Near East” by O. Bar-Yosef

**4/17 - Session 9:** Lab/Exercise – Ice Core Lab

**Session 9 Readings:** Braje, T.J., and J.M. Erlandson. 2013. “Human acceleration of animal and plant extinctions: A Late Pleistocene, Holocene, and Anthropocene continuum.” *Anthropocene* 4:14-23.

### Week 4: Myth + History – Culture and the Environment

**Podcast:** Myths and Legends Podcast – Epic of Gilgamesh <https://www.mythpodcast.com/tag/gilgamesh/>

**4/20 - Session 10:** Worldview and Human Attitudes Towards Environments – When forests were “evil.”

**Session 10 Readings:** (1) Newman, S.E. 2016. “Sharks in the Jungle: Real and Imagined Sea Monsters of the Maya.” *Antiquity*. (2) Williams, M., 2000. “Dark ages and dark areas: global deforestation in the deep past” in *Journal of Historical Geography* 26.1: pp. 28-46

**4/22 - NO CLASS – EARTH DAY – Virtual Teach-In**

[https://docs.google.com/forms/d/e/1FAIpQLSfzQZguLSpfoiDTfif7oqqThf\\_pdiistl92DnHJ3ipUlvaEw/viewform](https://docs.google.com/forms/d/e/1FAIpQLSfzQZguLSpfoiDTfif7oqqThf_pdiistl92DnHJ3ipUlvaEw/viewform)

**4/24 - Session 11:** Lab/Exercise - Palynology Lab

**Session 11 Readings:** Chapter 5 in Jared Diamond’s “Collapse”

### Week 5: Agricultural and Environmental Sustainability

**Video:** Archaeobotany (short video): <https://www.youtube.com/watch?v=r0YuRxgpXVE>

**4/27 - Session 12:** Topic + Methods – Resource Scarcity – Agency, Overuse, and Ignored Resources?

**Session 12 Readings:** (1) Marston, J.M. 2011. “Archaeological Markers of Agricultural Risk Management.” *Journal of Anthropological Archaeology* 30: 190-205.; (2) Barker, G. 2011. “The Cost of Cultivation.” *Nature* 473: 163-164.

**4/29 - Session 13:** Case Study – The Garden City

**Session 13 Readings:** Ford, A., and R. Nigh. 2009. "Origins of the Maya Forest Garden: Maya Resource Management." *Journal of Ethnobiology* 29(2): pp. 213-236.

**5/1 - Session 14:** Midterm Due – No Lab

**Session 14 Readings:** VanDerwarker, A.M., et al. 2013. "Farming and foraging at the crossroads: the consequences of Cherokee and European interaction through the late eighteenth century." *American Antiquity* 78:68–88.

#### **Week 6: (When) Waterworks – Problems with Predictability**

**5/4 - Session 15:** Topic + Methods – Understanding Ancient Water Systems

**Session 15 Readings:** Mithen, S., 2012. "The black fields became white / the broad plain was choked with salt: water management and the rise and fall of Sumerian civilization, 5000-1600 BC". *Thirst: Water and Power in the Ancient World*. Harvard: pp. 44-74.

**5/6 - Session 16:** Case Study – Aztec Chinampa System + Waterworks of Harappa

**Session 16 Readings:** Arco, L.J., and E.M. Abrams. 2006. "An Essay on Energetics: The Construction of the Aztec Chinampa System." *Antiquity* 80(310): 906-918.

**5/8 - Session 17:** Lab/Exercise – Google Earth Lab

**Session 17 Readings:** Chapter 11 of *The Archaeology of Climate Change*, "Hohokam and Pima-Maricopa Irrigation Agriculturalists: Maladaptive or Resilient Societies?" by John C. Ravesloot, J. Andrew Darling, and Michael R. Waters

#### **Week 7: Diet and Subsistence**

**Podcast:** BBC Radio 4's *In Our Time: History – The Great Irish Famine*

<https://www.bbc.co.uk/programmes/m0003rj1>

**5/11 - Session 18:** Topic + Methods – Feast or Famine + Reconstructing Ancient Diets

**Session 18 Readings:** Chapter 5 of *The Archaeology of Environmental Change*, "Farming the Margins: On the Social Causes and Consequences of Soil-Management Strategies" by Tina L. Thurston

**5/13 - Session 19:** Case study – Culture, Politics, and Food Production

**Session 19 Readings:** Fisher, Chelsea 2020. "Maize Politics and Maya Farmers' Traditional Ecological Knowledge in Yucatán, 1450–1600."

**5/15 - Session 20:** Lab/Exercise – Why do famines happen?

**Session 20 Readings:** Morgan, J. 2013, *The Invisible Hunger: Is Famine Identifiable from the Archaeological Record?* In, *Antrocom Online Journal of Anthropology* 2013, vol. 9. n. 1

#### **Week 8: Mortuary Practices – Healthy Bones in Hurried Graves?**

**Podcast:** Parcast's *Haunted Places – Poveglia Island* <https://www.parcas.com/haunted>

**5/18 - Session 21:** Topic + Methods – The Visibility of Endemics and Environment



**Session 21 Readings:** Prout, M. G. and James E. Brady 2018, Paleodemographics of Child Sacrifice at Midnight Terror Cave: Reformulating the Emphasis of Maya Sacrificial Practices.

**5/20 - Session 22:** Case Study – Dangerous Endemics, Identifying the Aztec ‘Cocozitli’

**Session 22 Readings:** (1) Vagene et al. 2018, Salmonella enterica genomes from victims of a major sixteenth-century epidemic in Mexico. *Nature Ecology and Evolution*, 2:520-28; (2) Acuna-Soto, et al. 2002, Megadrought and Megadeath in 16th Century Mexico. *Emerg Infect Dis.* 2002 Apr; 8(4): 360–362.

**5/22 – Session 23:** Lab/Exercise – Spreading Disease Around the World (Games as Models)

**Session 23 Readings:** Koch, A. et al. 2019, Earth system impacts of the European arrival and Great Dying in the Americas after 1492. *Quaternary Science Reviews*, Volume 207, March 1st, 2019, Pages 13-36

<b>Week 9: Climate Change and Messages for the Future</b>
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**Podcast:** The Secret History of the Future, Season 2, Episode 10: Mars on Earth

<https://www.economist.com/podcasts/2019/07/31/mars-on-earth-can-victorian-polar-expeditions-teach-us-about-space-exploration>

**5/25 - MEMORIAL DAY NO CLASS**

**5/27 - Session 24:** Case Study – Language Obsolescence

**Session 24 Readings:** Holtorf, C., and A. Högberg. 2014. “Nuclear Waste as Cultural Heritage of the Future,”

WM2014 Conference Proceedings. [www.xcdsystem.com/wmsym/member/2014\\_proceedings.cfm](http://www.xcdsystem.com/wmsym/member/2014_proceedings.cfm)

**5/29 - Session 25:** Final Project Review

**Session 25 Readings:** Chapter 15 and Chapter 16 of Jared Diamond’s “Collapse”

**\*\*\*FINAL PROJECTS TO BE SUBMITTED NO LATER THAN FRIDAY JUNE 5<sup>th</sup>\*\*\***

<b>COURSE TEXTS</b>
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**TEXTBOOKS**

1. The Archaeology of Environmental Change: Socionatural Legacies of Degradation and Resilience (2009) edited by Christopher T. Fisher, J. Brett Hill, and Gary M. Feinman ISBN: 9780816526765; List Price new paperback on Amazon: \$40.00 (**Required chapters made available as PDF’s on Canvas in Files by the Dartmouth College Library**).

2. Collapse: How Societies Choose to Fail or Succeed: Revised Edition (2011) by Jared Diamond ISBN: 9780143117001; List Price new paperback on Amazon: \$12.89 (**eBook Available as a Course Reserve through the Dartmouth College Library**).

**\*\*\* If you encounter financial challenges related to this class, please let me know.\*\*\***

## READINGS ON CANVAS

Acuna-Soto, et al. 2002, Megadrought and Megadeath in 16th Century Mexico. *Emerg Infect Dis.* 2002 Apr; 8(4): 360–362.

Arco, L.J., and E.M. Abrams. 2006. "An Essay on Energetics: The Construction of the Aztec Chinampa System." *Antiquity* 80(310): 906-918.

Barker, G., 2011. "The Cost of Cultivation." *Nature* 473: 163-164.

Bishop, R.R., M.J. Church, and P.A. Rowley-Conway. 2015. "Firewood, food, and human niche construction: the potential role of Mesolithic hunter-gatherers in actively structuring Scotland's woodlands." *Quaternary Science Reviews* 108:51-75.

Braje, T.J., and J.M. Erlandson. 2013. "Human acceleration of animal and plant extinctions: A Late Pleistocene, Holocene, and Anthropocene continuum." *Anthropocene* 4:14-23.

Buckley, B.M., et al. 2010. "Climate as a Contributing Factor in the Demise of Angkor, Cambodia." *Proceedings of the National Academy of Sciences of the United States of America* 107(15): 6748–6752.

De Leon, J., 2015. *The Land of Open Graves*. [selections].

Fisher, Chelsea, 2020. "Maize Politics and Maya Farmers' Traditional Ecological Knowledge in Yucatán, 1450–1600." *Human Ecology*. Volume 48, pages 33–45.

Ford, A., and R. Nigh. 2009. "Origins of the Maya Forest Garden: Maya Resource Management." *Journal of Ethnobiology* 29(2): pp. 213-236.

Jackson, J.B. C., et al., 2001. "Historical overfishing and the recent collapse of coastal ecosystems." *Science* 293:629-638.

Kintigh, K. et al., 2014. "Grand Challenges for Archaeology." *PNAS* 111(3): 879-880.

Koch, A. et al. 2019, Earth system impacts of the European arrival and Great Dying in the Americas after 1492. *Quaternary Science Reviews*, Volume 207, March 1st, 2019, Pages 13-36

Marston, J.M., 2011. "Archaeological Markers of Agricultural Risk Management." *Journal of Anthropological Archaeology* 30: 190-205.

Mieth, A., and Hans-Rudolf Bork. 2010. "Humans, climate or introduced rats – which is to blame for the woodland destruction on prehistoric Rapa Nui (Easter Island)?" *Journal of Archaeological Science* 37:417–426.

Mithen, S., 2012. "The black fields became white / the broad plain was choked with salt: water management and the rise and fall of Sumerian civilization, 5000-1600 BC". *Thirst: Water and Power in the Ancient World*. Harvard: pp. 44-74

Morgan, J. 2013, The Invisible Hunger: Is Famine Identifiable from the Archaeological Record? *Antrocom Online Journal of Anthropology* 2013, vol. 9. n. 1

Newman, S.E., 2016. "Sharks in the Jungle: Real and Imagined Sea Monsters of the Maya." *Antiquity*.

Newman, S. 2019 "Rubbish, Reuse, and Ritual at the Ancient Maya Site of El Zotz, Guatemala." *Journal of Archaeological Method and Theory* (2019) 26:806–843

Prout, M. G. and James E. Brady 2018, Paleodemographics of Child Sacrifice at Midnight Terror Cave: Reformulating the Emphasis of Maya Sacrificial Practices. *Archaeological Discovery* Vol.06 No.01 (2018).

Van Derwarker, A.M., et al. 2013. "Farming and foraging at the crossroads: the consequences of Cherokee and European interaction through the late eighteenth century." *American Antiquity* 78:68–88.

Williams, M., 2000. "Dark ages and dark areas: global deforestation in the deep past" in *Journal of Historical Geography* 26.1: pp. 28-46

### **ASSIGNED VIDEOS**

In focus: Ötzi "The Iceman." (2016: 25th Anniversary, Archaeosoup). <https://youtu.be/bZr-uAOJqo4>

<b>FOR FURTHER INTEREST CHECK THESE OUT (NOT ASSIGNED)</b>
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Brantingham, P.J., 2006. "Measuring forager mobility." *Current Anthropology* 47:435-459

Candiani, V. 2014. *Dreaming of Dry Land: Environmental Transformation in Colonial Mexico City*. Stanford.

Dunning, N.P. et al., 2002. "Arising from the Bajos: The Evolution of a Neotropical Landscape and the Rise of Maya Civilization." *Annals of the Association of American Geographers* 92(2): 267-283.

Fletcher, R. et al., 2008. "The Water Management Network of Angkor, Cambodia." *Antiquity* 82: 658-670.

Jackson, J.B. C., et al., 2001. "Historical overfishing and the recent collapse of coastal ecosystems." *Science* 293:629-638.

Kolbert, E., 2015. *The Sixth Extinction: An Unnatural History*.

Lucero, L.J., R. Fletcher, and R. Coningham. 2015. "From 'Collapse' to Urban Diaspora of the Classic Maya: A Case for the Role of Water Control." *Antiquity* 89(347): pp. 1139-1154.

Otter, C., 2014. "Scale, Evolution, and Emergence in Food Systems." *Limn* 4: Food Infrastructures. <http://limn.it/scale-evolution-and-emergence-in-food-systems/>.

McBrearty, S., and A.S. Brooks. 2000. The revolution that wasn't: a new interpretation of the origin of modern human behavior. *Journal of Human Evolution* 39:453-563.



Mellars, Paul. 2006. Why did modern human populations disperse from Africa ca. 60,000 years ago? A new model. PNAS 103:9381-9386.

Zeder, M., 2012. "Pathways to Animal Domestication." In Biodiversity in Agriculture, eds., P. Gepts, T.R. Famula, R.L. Bettinger, et al. Cambridge: Cambridge University Press: pp. 227-259.

#### TEACHING METHODS AND PHILOSOPHY

I believe that the classroom can be an exploratory forum for intellectual growth and an empowering platform for community building. It can also be a safe space to be candid, allowing students to test and develop emerging skill sets. To develop critical thinking, I have designed this class with an emphasis on scaffolding to first cultivate and then apply the toolkits students will develop over the course of the quarter. Many of my assignments have a creative and experimental component pushing students to pursue research and fieldwork outside of the classroom. These situations grant students much autonomy, empowering them to navigate challenging situations, and providing invaluable opportunities to engage in creative problem-solving. Thus, experiential learning plays a prominent role in my approach to teaching because I believe students learn best when activities are hands-on and transcend traditional classroom boundaries. Thus, our typical sessions include a mix of lecture, discussion, small group work, active learning, web-based learning, and experiential learning, and outside research.

#### CONSENT TO RECORD

##### **(1) Consent to recording of course and group office hours**

- a) I affirm my understanding that this course and any associated group meetings involving students and the instructor, including but not limited to scheduled and ad hoc office hours and other consultations, may be recorded within any digital platform used to offer remote instruction for this course;
- b) I further affirm that the instructor owns the copyright to their instructional materials, of which these recordings constitute a part, and distribution of any of these recordings in whole or in part without prior written consent of the instructor may be subject to discipline by Dartmouth up to and including expulsion;
- b) I authorize Dartmouth and anyone acting on behalf of Dartmouth to record my participation and appearance in any medium, and to use my name, likeness, and voice in connection with such recording; and
- c) I authorize Dartmouth and anyone acting on behalf of Dartmouth to use, reproduce, or distribute such recording without restrictions or limitation for any educational purpose deemed appropriate by Dartmouth and anyone acting on behalf of Dartmouth.

##### **(2) Requirement of consent to one-on-one recordings**

By enrolling in this course, I hereby affirm that I will not under any circumstance make a recording in any medium of any one-on-one meeting with the instructor without obtaining the prior written consent of all those participating, and I understand that if I violate this prohibition, I will be subject to discipline by Dartmouth up to and including expulsion, as well as any other civil or criminal penalties under applicable law.

## EVALUATION AND REQUIREMENTS

Spring term 2020 courses are offered on a Credit/No Credit basis. All students receive a final grade of C.T. (Credit) or N.C. (No Credit) in each of their courses. A grade of N.C. is defined as failure to complete the course satisfactorily according to criteria announced by the instructor at the beginning of the term. Such a course will be counted, if the grade is C.T., toward the minimum of thirty-five needed for graduation. Courses earned spring 2020 may be used to satisfy a General Education requirement and counted toward the Major Requirement.

Courses under this system carry no grade units and are not used in establishing a cumulative average. If a student receives a grade of N.C., the course is recorded as such, and the student will not receive credit for the course. As in regularly graded courses, there can be a temporary standing of Incomplete.

The grade of Credit (C.T.) earned spring 2020 will not be counted against the usual total of 27 required letter grades that students must have on their record or use of the NRO option in future terms.

To earn a grade of Credit (C.T.) in this course, students are expected to complete all weekly readings reflections and responses by the sessions for which they are listed. Students are tasked with completing all assignments and exercises by the asked for dates. All assignments will be evaluated by a system of:

**Check +** (above and beyond expectations, usually an A)

**Check** (meets requirements, usually a B)

**Check –** (does not meet requirements, usually a C)

**No Credit** (no effort/not sufficient effort, usually D and lower)

Students who receive regular evaluations of Checks and Check +'s will earn a grade of Credit (C.T.)

Students receiving Check – evaluations (or No Credit) will be contacted by the instructor.

## ASSIGNMENTS AND EXPECTATIONS

### WEEKLY READING GROUPS (20%) - WEEKLY

Discussion of weekly readings will be held on Canvas and contained within your assigned group. Groups will be assigned during Week 1 and begin posts on Week 2. Weekly prompts and critical questions inspired by the readings will be posted to your assigned group on Canvas each week. Students should meet with their groupmates to discuss the readings before writing a response. Group discussion of the prompts should generate new insight on the readings while maintaining focus on the Assigned Reading Expectations detailed on this syllabus (below).

Subsequent individual written responses to reading prompts should be completed no later than Sunday evening following a prompt's posting (i.e., one week). Responses will help you keep on schedule with readings and cover topics relevant to the Midterm and Final. You are allowed to submit one response late (with no impact), and the lowest-scoring response for each student will be dropped at the end of the quarter. Missing more than one full response could impact the successful performance of a student. A successful reading reflection should reach a minimum of 500 words and not exceed a maximum of 1000.

### **LABS (30 %) – WEEKS 1, 2, 3, 4, 6, 7, and 8**

Each week our third session will operate as a digital or remote lab exercise, asking students (and student groups) to think critically, taking positions on debates, and exploring concepts from our lessons. If you miss a class exercise (for excusable reasons), you will be expected to complete a lab on your own time. Lab exercises require a write up of the experience (which will be unique to each lab). Likewise, each lab will act as an independent module with its own set of instructions and goals – which can be submitted online via Canvas. Weekly Lab Exercises will break students into small discussion groups of about five during our class session.

### **MIDTERM (15 %) – Due 5/1**

The midterm essay asks students to reflect on the material impact of contemporary events, like climate change and COVID 19 critically. As we explore in our class, the resolution through which archaeologists remotely view the past is incredibly low. Understanding this, the Midterm asks students to take a critical perspective on present events, circumstances, or conditions and how they might contribute to the archaeological record visible to future archaeologists. This assignment will draw upon critical core concepts of the course (especially environmental systems, the Anthropocene, and materiality). Prompts for the Midterm will be sent out at the beginning of Week 3.

A persuasive essay should be well researched (with four to six peer-reviewed sources), contain a clear argument, or a well-written object narrative in the form of biography or exposition on educational use and practice. Midterm papers are due by the end of Week 5 (by Friday at Midnight).

The Midterm research essay should be completed in no fewer than four full pages and no greater than six total pages. Figures, tables, maps, and images should be listed only at the end of the essay and do not count as part of the page count. Likewise, citations do not count towards your page count, and bibliographic sources must be listed at the end of each student's paper.

### **GARBOLOGY PROJECT (15%) – WEEKLY PARTICIPATION**

Stemming from our first Lab Exercise, the Garbology Project will run over the course of our quarter. In doing so, students will be asked to record material waste, including clean food boxes, plastics, and other discarded kitchen items. Bathroom waste and personal care products will be omitted from this project. The recording will take place on an Excel file inventory that will accumulate each session. Be sure to take inventory photographs of your artifacts (garbage) and ask your family to support you in this somewhat strange, reflective, and revealing project. Further details on this project will be covered in class and detailed on Canvas. This exercise constitutes class participation that will help us generate not only metrics on food waste but on food waste during a pandemic. In addition, there is also an open forum on Canvas for discussing difficulties, revelations, and intriguing insights generated from this study.

### **FINAL (20%) – DUE NO LATER THAN JUNE 5<sup>th</sup>**

The Final will be an independent research paper that asks students to identify and explore a relevant problem, topic, or phenomena related to Environmental Archaeology. The research paper must be on a topic related to the course and be approved in advance by no later than the last week of the term by submitting a one - paragraph proposed paper topic and five scholarly references. *The paper should be approximately between 6 (min) and 8 (max) double spaced pages in length, 12-point font. Further details*

*on the final paper will be sent distributed during Week 4.* Figures, tables, maps, and images should be listed only at the end of the essay and do not count as part of the page count. Likewise, citations do not count in your page count, and bibliographic sources must be listed at the end of each student's paper.

### **COVID-19 AND THE ENVIRONMENT DISCUSSIONS – ONGOING PARTICIPATION**

In some ways, the immediacy and visibility of COVID-19's impact on environmental systems are quite surprising, yet deeply relevant to the core of our class. How COVID-19 is already impacting local environments is catching media attention. Therefore, our class will maintain a group discussion board to post interesting media coverage on such stories. Moreover, we can use this virtual space to take a critical lens to the stories we find and have an engaging discussion on them. Here we will evaluate claims like, "are dolphins really returning to Venice?" Or "To what extent are greenhouse emission's curbed in China?" These claims and more will be subject to scholarly debate.

<b>ASSIGNED READING EXPECTATIONS</b>
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Readings assigned are critical for the course, and content from them will be used on exams and should be drawn upon for essays. As such, reflecting critically on readings is a responsibility shared by each student. After completing a reading, students should be prepared to answer these questions discussions.

<i>Questions on the readings for each class include:</i>	
1.	What evidence was used by the authors to make their argument?
2.	Why is this reading important?
3.	How does this reading relate to ideas presented in class discussion or lecture?
4.	What is one term you do not recognize in the text or need to look up to understand?

<b>CLASS CLIMATE AND INCLUSIVITY</b>
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Following the charge of renown anthropologist Ruth Benedict, that "The purpose of anthropology is to make the world safe for human differences," I believe that our classroom should be a safe space to express intellectual issues on culture, heritage, and the human condition. Social difference, for example, should be anticipated as a fundamental thread weaving its way into each of our sessions. I believe it is up to the instructor to set the tone early on and guide students to feel open, comfortable, and safe, asking critical questions they might otherwise shy away from. As I prepare my students to encounter their world through new, unfamiliar perspectives, I strive to build a sense of rapport and trust within our classroom, working to instill community and collegiality to help students recognize each other as resources and not rivals. My goal in doing so is to create an environment where students can develop meaningful relationships with me and one other so that they will be comfortable asking difficult questions and come to recognize the value of collaboration.

## STUDENT ACCESSIBILITY AND ACCOMMODATIONS

Students requesting disability-related accommodations and services for this course are encouraged to schedule a phone/video meeting with me as early in the term as possible. This conversation will help to establish what supports are built into my online course. In order for accommodations to be authorized, students are required to consult with Student Accessibility Services (SAS; [student.accessibility.services@dartmouth.edu](mailto:student.accessibility.services@dartmouth.edu); SAS website; 603-646-9900) and to email me their SAS accommodation form. We will then work together with SAS if accommodations need to be modified based on the online learning environment. If students have questions about whether they are eligible for accommodations, they should contact the SAS office. All inquiries and discussions will remain confidential.

## RELIGIOUS OBSERVANCES

Some students may wish to take part in religious observances that occur during this academic term. If you have a religious observance that conflicts with your participation in the course, please meet with me before the end of the second week of the term to discuss appropriate accommodations.

I encourage students with disabilities to be in contacts with me by email or during Zoom office hours by the end of the second week of the term about accommodations that might be helpful to them. Should you have a religious observance that conflicts with your participation in the course, please speak with me before the end of the second week of the term to discuss appropriate accommodations.

## MENTAL HEALTH AND WELLNESS

The academic Environment at Dartmouth is challenging, our terms are intensive, and classes are not the only demanding part of your life. There are a number of resources available to you on campus to support your wellness, including your undergraduate dean (<https://students.dartmouth.edu/undergraduate-deans/>), Counseling and Human Development (<https://students.dartmouth.edu/health-service/counseling/about>), and the Student Wellness Center (<https://students.dartmouth.edu/wellness-center/>). I encourage you to use these resources to take care of yourself throughout the term, and to come speak to me if you experience any difficulties.

## OUTSIDE WEBSITES FOR FURTHER RESEARCH

Environmental Archaeology:

- University of Florida <https://www.floridamuseum.ufl.edu/envarch/what/>
- Boston University Environmental Archaeology Lab: <http://sites.bu.edu/ealab/research/>

Educational Sources on Systems Theory:

- <https://youtu.be/GRnkggRSIDY>
- [https://www.youtube.com/watch?v=ZS5y--ODWeU&list=PLsJWgOB5mIMCAD33pve6\\_HyfuGTICTQgd](https://www.youtube.com/watch?v=ZS5y--ODWeU&list=PLsJWgOB5mIMCAD33pve6_HyfuGTICTQgd)
- <https://systemsinnovation.io/course>
- <https://systemsinnovation.io/course/social-complexity/>

Educational Sources on the Anthropocene:

- [https://www.youtube.com/watch?time\\_continue=2&v=DjWkifPqD6I&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=2&v=DjWkifPqD6I&feature=emb_logo)

Educational Sources on Socioecological Systems:

- [https://www.youtube.com/watch?time\\_continue=1&v=2r\\_Fms8uWZk&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=1&v=2r_Fms8uWZk&feature=emb_logo)

Educational Sources on Adaptive capacity:

- [https://www.youtube.com/watch?v=vIVAY7a\\_vPI&feature=emb\\_logo](https://www.youtube.com/watch?v=vIVAY7a_vPI&feature=emb_logo)

#### DARTMOUTH LINKS FOR FURTHER RESEARCH

[Academic Skills Center](#) (ASC): Open to the entire Dartmouth community, the ASC assists students in achieving their academic goals through tutoring and learning skills trainings.

[Research Center for Writing, and Information Technology](#) (RWIT): RWIT is a free service dedicated to helping members of the Dartmouth community develop more effective strategies for generating and organizing their ideas, finding and evaluating research sources, and presenting and revising compositions in a variety of media.

[Dartmouth College Library](#): The Dartmouth College Library provides support through subject area specialization, course materials and reserves, reservable learning spaces, workshops & classes for students, research, scholarly publication, copyright, media, book arts, and more.

#### HONOR PRINCIPLE

You are reminded that the Honor Principle applies to all work done outside of class, as well as in-class exams. Research papers and take home-essays, if applicable, should contain citations to the work of others used in preparing your paper/essay following the guidelines laid out in Sources. You are encouraged to discuss the course material with other students outside of class, but the work you submit for exams, essays, and papers must be written by you and reflect your ideas and conclusions and contain citations to other sources where appropriate. <https://students.dartmouth.edu/community-standards/policy/academic-honor-principle>

For more on Community Standards & Accountability, visit: <https://students.dartmouth.edu/community-standards/>