

ANTH/SIO 275
Introduction to Paleoethnobotany
Instructor: Dr. Jade d'Alpoim Guedes
Monday: 9:30-12:20
Friday: 10:00-11:50
Meets: Vaughan Hall 147
Lectures: watched online
jguedes@ucsd.edu
Office hours: by appointment

1.) Course Description:

This course is designed to provide a relatively comprehensive understanding of paleoethnobotany, in addition to hands-on experience working with plant remains. We will focus primarily on macro-remains, although we will minimally discuss pollen and phytolith data as well. We consider the history of the discipline, field and lab methodology, the uses of macrobotanical data to reconstruct environment and subsistence, spatial versus temporal analysis, quantitative methods, and taxonomy. Readings cover the above topics, in addition to several case studies. Class will be divided between seminar and lab time. Students will be involved in hands-on microscope work and will collectively conduct an analysis of a macrobotanical assemblage from the site of Farmana in India will produce a publishable quality report by the end of the quarter. This course presumes that you have some basic knowledge of the origins of agriculture and or traditional plant use in prehistory. Please note that this is primarily a lab course. We may have labs both of the scheduled days of the week in order to cover the vast numbers of plant families with which you will need to familiarize yourself in order to become a paleoethnobotanist and to be able to complete your final project. Please note that this course requires a substantial investment in lab hours outside of those scheduled for class. You are expected to spend a minimum of 3-4 additional hours a week working on sorting and identifying samples for your final project. Lectures will be recorded and uploaded to the course website. Please be sure to watch these before the start of class on Monday to familiarize yourself with materials that will be covered that week. For the first week of class, make sure to watch the lecture before class on Friday.

2.) Course Requirements:

Students will be evaluated on their lab work; presentations of readings assignments due weekly; a small project involving the collection of modern comparative specimens; and a final project that is the outcome of the botanical analysis conducted by the class in the lab sessions.

Grading:

- i.) Seminar discussion lead (11%)
- ii.) Short lecture quizzes (5%)
- iii.) Reading comments: You must post a 200-400-word comment on the course website the night before class on each of the readings. Due at 11:30 PM the night before class. (16%)
- iv.) Lab (28%)
- vi.) Final Project (40%)

i.) Seminar presentations and reading annotations: Readings are required. One week, you will assigned an article to present and will create a video which will be uploaded to the course

website. In this video you should present 1-4 slides about the article. Your slides should focus on the major points/problems of the article. Articles assigned for presentation are starred by an *.

When you present an article, you must address the following:

- 1.) What is the objective of the article? What problem does it raise or address? What issue does it attempt to resolve? What hypotheses are evaluated?
- 2.) What are the strengths of this reading? What aspects are handled well in the data analysis? Which aspects of the paper are well argued? Note: this is not a book review so focus on the strengths of the argument not the mechanics of the paper.
- 3.) What are the weaknesses? What is the lasting significance of this article? Why should it be read beyond when it was published? Why/is this an influential piece of scholarship?

You will then comment on your peer's videos to continue the discussion to get full points.

ii.) Post-Lecture quizzes: In order to allow us maximal lab time, lectures will be uploaded to the course website. There will be a total of 5 lectures uploaded for you to watch that focus on giving you a background on key issues in plant structure and evolution which are critical to understanding plants. Each lecture quiz will count for a total of 1 point.

ii.) Reading comments: You will be required to post a 200-500 word comment (in the form of a journal entry) on each set of readings by 11:30 pm the night before class. There will be a total of 8 reading comments. These short-reading and writing assignments will be placed on and turned in on the course website. You will see them appearing in the contents section of the course. In your reading comments you will be asked to write a very brief summary of the content of the most important elements of the paper. Being able to boil complex arguments down to their basics is a key academic skill. The second part of your comment should focus on a critique. Your critique should analyze and evaluate the paper. What did the author of the paper do well? What did they not manage to pull off? What unstated assumptions went into the paper and will those (or did those) stand the test of time? Finally, end by asking questions about anything that confused you or was unclear to you about the reading.

When writing, think of yourself as a professional. Once you have written your response, edit it down to make it as pithy as possible: you will be amazed how much content you can fit into a few hundred words by using clear language and by trimming down to the essential. Double check your work and make sure it does not contain grammar mistakes, misspellings, or unclear phrasing.

iii.) Lab: In weeks 2-8, we will have a series of graded labs which will help you refine your identification skills and understanding of plant evolution. Please read your lab at home prior to the start of class on Monday or Friday. There will be a total of 7 labs which are worth 2 points each. You must purchase at least a 3-inch ring binder for this class and sketching paper for this binder. Ideally, this should consist of graph paper or at the very least purchase a piece of graph paper you can use for tracing as you should aim to draw your species to scale and this will help you. This binder will contain all your drawings of modern reference collection and archaeological seeds as well as photocopies of relevant identification material. Purchase dividers to organize your material by plant family. You are required to keep a notebook of all your labs, which includes your drawings of specimens, your lab sheets and your answers to lab questions that will be graded. Your notebook should be a 3- inch binder in which you can place your notes

and drawings from labs as well as any material given to you by the instructor. Your lab notebook should be handed in on Monday at the end of class for instructor feedback.

iv.) Final Project: The bulk of your grade will be placed on the production of a report on the archaeobotanical remains you have analyzed throughout the course of the semester. This quarter we will focus on analyzing remains from the site of Farmana in India. If you have another collection that you would like to analyze, please arrange to meet to discuss with the instructor. Note that this course focuses primarily on Paleoethnobotany of the Near East, South and East Asia. Each student will write up a report which details how the seeds were identified and analyzed, will summarize basic patterns and present a quantified interpretation of the data. Your paper formatting and length should follow [https://antiquity.ac.uk/sites/default/files/downloads/Antiquity Submission Guidelines May 2021.pdf](https://antiquity.ac.uk/sites/default/files/downloads/Antiquity%20Submission%20Guidelines%20May%202021.pdf) for the journal *Antiquity*.

Some data from this site has already been published and you can read about the archaeobotany and general archaeology of this site in the following readings which will be uploaded to the course website:

Weber, Kashyap, and Mounce. 2011. Archaeobotany at Farmana: New Insights Into Harappan Plant Use Strategies. In: Excavations at Farmana. V. Shinde, T. Osada and M. Kumar (eds). RIHN, Nakanish Printing: Kyoto, 808-823.

Kashyap and Weber 2010. Harappan plant use revealed by starch grains from Farmana, India. [Antiquity](#), 84.

COVID-19 policies: We are still in the midst of a pandemic. While this might not be required by the university at the time we start class, I am asking all students to wear a well fitted N-95 to keep each other safe. I will have a supply of these ready at the start of each class. If you have any symptoms of COVID-19 or Monkeypox, please stay home, and carry out a PCR test using one of the universities vending machines or at the Price Center and return to class only when you have a negative test. We will arrange for alternative laboratory assignments to be given to you if you are ill. Please contact me immediately if you have any symptoms or test positive over the course of the quarter so we can make arrangements for alternative non-lab based assignments.

Grading Scale:

94-100 = A
90-93 = A-
87-89 = B+
84-86 = B
80-83 = B-
77-79 = C+
74-76 = C
70-73 = C-
67-69 = D+
64-66 = D
60-63 = D-
<60 = F

Course Policies

Accommodations for Students with Disabilities: Students requesting accommodations for this course due to a disability must provide a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD) which is located in University Center 202 behind Center Hall. Students are required to present their AFA letters to Faculty (please make arrangements to contact me privately) and to the OSD Liaison at the Global Health Program in advance so that accommodations may be arranged.

Academic Integrity Students should be familiar with the UCSD Policy on Academic Integrity (<http://senate.ucsd.edu/Operating-Procedures/Senate-Manual/Appendices/2>). All written coursework is to be original and individually authored by the student who turns it in. All sources must be cited and credited. If you have any questions about how it applies to this course, please ask. Any student found to have violated the university's academic integrity standards will be subject to penalties ranging from failing the assignment or course to suspension or expulsion from the university. Your responsibilities and rights under the UCSD Student Code of Conduct can be found at http://students.ucsd.edu/student-life/_organizations/student-conduct/index.html

Policy on late assignments: Writing assignments are due on the day indicated and you will have sufficient time to complete them. Papers must be received on the day specified or they will be considered late. If you have extenuating circumstances, discuss them with your instructor well in advance and see what sort of accommodation might be made. Do note that fabricating an excuse to turn in a late assignment is a violation of the university's academic integrity policy and could result in sanctions.

Readings and Required Texts

There is one textbook required for this class:

Marston, d'Alpoim Guedes and Warinner (Eds). 2014. *Method and Theory in Paleoethnobotany*. University of Colorado Press.

We will also have readings from the following two books, however it is not necessary to purchase these.

D. Pearsall. 2015. *Paleoethnobotany: A Handbook of Procedures*. Left Coast Press: Walnut Creek.

C. Hastorf and V. Popper (Eds) 1989. *Current Paleoethnobotany*. University of Chicago Press.

PDFS of other readings will be uploaded to the course website. If a reading is not in the course website it is because it is in one of these books.

Week	Date	Class Style	Topic	Readings/Assignments	Final project milestone
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1	Friday September 23 rd	Lecture and Lab orientation	Introduction to the class	None	Start sieving your samples
2	Due by Sunday September 25 th 11:30 pm	Watch Video 2.1: What's a plant and Early Plant Evolution Watch Video 2.2: Evolution of the Seed		Quiz 1	
2	Monday September 26 th	Lab 1	Plant Evolution 1 From the oceans to early land plants		
2	Friday September 30 th	Lab 1 (part 2)	From the oceans to early land plants and the evolution of the seed/Introduction to Farmana		
3	Due by Sunday October 2 nd	Watch Lecture 3: Fruits and Flowers		Quiz 2	
3	Monday October 3 rd	Lab 2	From Flowers to Fruits		
3	Friday October 7 th	Seminar/Complete lab/ work on archaeological materials	Formation Processes of the Archaeobotanical record	Gallagher. 2014. Formation Processes of the Macrobotanical Record in M. Marston, J. d'Alpoim Guedes, J. and C. Warinner (Eds.), <i>Method and Theory in Paleoethnobotany</i> . University of Colorado Press. *Miller, Naomi, and Tristine Smart. 1984. Intentional Burning of Dung as Fuel: A Mechanism for the Incorporation of Charred Seeds into the Archaeological Record. <i>Journal of Ethnobiology</i> 4(1):15-28.	Complete sample sieving/ Start sort

				<i>Reading comments due</i>	
4	Monday October 10 th	Lab 3 Watch video on flotation	Flotation and laboratory sorting techniques	White, Chantel and Shelton, China. 2014. Recovering Macrobotanical Remains: Current Methods and Techniques. in J. D'Alpoim Guedes, J. M. Marston and C. Warinner (Eds.), <i>Method and Theory in Paleoethnobotany</i> . University of Colorado Press.	Sort samples
4	Friday October 14 th	Seminar	Sampling Strategies <i>Reading comments due</i>	d'Alpoim Guedes, Jade and Spengler, Robert. 2014. Sampling strategies in J. d'Alpoim Guedes, J. M. Marston and C. Warinner (Eds.), <i>Method and Theory in Paleoethnobotany</i> . University of Colorado Press. *Lennstrom, Heidi A., and Christine Hastorf. 1995. Interpretation of Context: Sampling and Analysis in Paleoethnobotany. <i>American Antiquity</i> 60:701-721.	Complete Pre- sort
5	Due by Sunday October 16 th at 11:30 pm	Watch lecture 4: Meristems and Wood structure			
5	Monday October 17 th	Lab 4	Wood structure and wood identification/ Visit to SEM		

5	Friday October 21 st	Seminar/ complete lab	Wood and Wood Charcoal <i>Reading comments due</i>	<p>*Asouti, E., and P. Austin. 2005. Reconstructing woodland vegetation and its relation to human societies, based on the analysis and interpretation of archaeological wood charcoal macro-remains. <i>Environmental Archaeology</i> 10: 1-18.</p> <p>*Shackleton and Prins. 1999. Charcoal Analysis and the “Principle of Least Effort”: A conceptual Model. <i>Journal of Archaeological Science</i> 19: 631-637.</p> <p>*Isabelle Théry-Parisot. 2010. Anthracology and taphonomy, from wood gathering to charcoal analysis. A review of the taphonomic processes modifying charcoal assemblages, in archaeological contexts <i>Palaeogeography, Palaeoclimatology, Palaeoecology</i> 291 (2010) 142–153.</p> <p>*Smart, Tristine and Ellen Hoffman. 1988. Environmental Interpretation of archaeological charcoal. In C. Hastorf and V. Popper (Eds.) <i>Current Paleoethnobotany</i>: 167-205.</p>	
6	Monday October 24 th	Lab 5	Weeds		Identify weeds

6	Friday October 28 th	Seminar	Environmental reconstruction and what is a weed? <i>Reading comments due</i>	*Willcox, George. 2012. Searching for the origins of arable weeds in the Near East. <i>Vegetation History and Archaeobotany</i> . 21(2) *Miller, Naomi. F. and John. M. Marston. 2012. Archaeological fuel remains as indicators of ancient west Asian agropastoral and land use systems. <i>Journal of Arid Environments</i> 86(0):97-103.	
7	Sunday October 30 th	Watch Lecture 5: Plant domestication	Lecture quiz 5 due		
7	Monday October 31 st	Lab 6	The Domestication and identification of grasses		Identify grass seeds
7	Friday November 4 th	Seminar	Plant Domestication <i>Reading comments due</i>	* Fuller, Dorian. 2007. Contrasting patterns in crop domestication and domestication rates: recent archaeobotanical insights from the old world. <i>Annals of Botany</i> 100(5): 903-924.	Complete sample sorting
8	Monday November 7 th	Lab 7	Beans, textiles and other common taxa		Identify other taxa
8	Friday November 11 th	Seminar/ Work on sample sorting	Documenting within site variability <i>Reading comments due</i>	*Amber M. VanDerwarker, Jennifer V. Alvarado, and Paul Webb. 2014. Analysis and Interpretation of Intrasite Variability in Paleoethnobotanical Remains: A Consideration and	Complete sample sorting

				<p>Application of Methods at the Ravensford Site, North Carolina. in J. D'Alpoim Guedes, J. M. Marston and C. Warinner (Eds.), <i>Method and Theory in Paleoethnobotany</i>. University of Colorado Press.</p> <p>*Sonya Atalay and Christine Hastorf. 2006. Food, meals and daily activities: The habitus of food practices at Neolithic Çatalhöyük. <i>American Antiquity</i> 71(2):283-319.</p>	
9	Monday November 14 th	Lab: Work on sorting final project	Quantification	<p>Marston, John M. 2014. Ratios and Simple Statistics in Paleoethnobotanical Analysis: Data Exploration and Hypothesis Testing in J. D'Alpoim Guedes, J. M. Marston and C. Warinner (Eds.), <i>Method and Theory in Paleoethnobotany</i>. University of Colorado Press.</p> <p>Smith, Alexia. 2014. The Use of Multivariate Statistics in Archaeobotany in J. D'Alpoim Guedes, J. M. Marston and C. Warinner (Eds.), <i>Method and Theory in Paleoethnobotany</i>. University of Colorado Press.</p>	
9	Friday November 18 th	Lab/Seminar	Documenting Regional Variability: Crop		Complete final sort and identification.

			<p>Processing Models and Big data</p> <p><i>Reading comments due</i></p>	<p>*Stevens, Chris. J.2003. An Investigation of Consumption and Production Models for Prehistoric and Roman Britain. <i>Environmental Archaeology</i> 2003(8):61-76.</p> <p>d'Alpoim Guedes, Jade, Manning, Sturt Bocinsky, R. Kyle (2016) A 5500 year model of changing crop niches on the Tibetan Plateau. <i>Current Anthropology</i> 57(4): 517-522.</p>	
10	Monday November 21st	Lab/Seminar	<p>Interdisciplinary archaeobotany</p> <p><i>Reading comments due</i></p>	<p>*Styring, Amy. K. et al. 2017. Isotope evidence for agricultural extensification reveals how the world's first cities were fed. <i>Nature Plants</i> 3</p> <p>*Logan, Amanda L. 2016 "Why Can't People Feed Themselves?": Archaeology as Alternative Archive of Food Security in Banda, Ghana. <i>American Anthropologist</i> 118 (3): 508-524.</p> <p>*Rafal M. Gutaker, Simon C. Groen, Emily S. Bellis, Jae Y. Choi, Inês S. Pires, R. Kyle Bocinsky, Emma R. Slayton, Olivia Wilkins, Cristina C. Castillo, Sónia Negrão, M. Margarida Oliveira, Dorian Q. Fuller, Jade A. d'Alpoim</p>	Begin data entry of samples.

				Guedes, Jesse R. Lasky, Michael D. Purugganan (2020) Genomic history and ecology of the geographic spread of rice <i>Nature Plants</i> 6: 492- 502.	
10	Friday November 25 th	NO CLASS: Thanksgiving break			
11	Monday November 28 th	Raw data from joint project due. Data entry.			Complete data entry
11	Friday December 2 nd	Completing final project			Work on final paper
12	Monday December 5 th	Exam week			<i>Work on final paper</i>
12	Friday December 9 th	Final Paper due at 11:30 pm			