

ARCHAEOLOGY 515, FALL 2021: ONLINE / ASYNCHRONOUS



PALAEOETHNOBOTANY: PHYTOLITH AND STARCH ANALYSIS

PROFESSOR **JULIO MERCADER**
TEACHING ASSISTANT **SIOBHAN CLARKE**

CONTACT TA, EMAIL, WORK HOURS: 9AM-4PM
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RESPONSE: 72H. NO REPLY AFTER HOURS, WEEKENDS, HOLIDAYS,
AND 24H BEFORE ANY DEADLINE.
SHOULD YOU NEED TO CONTACT YOUR PROFESSOR, THIS IS HIS
EMAIL: <MERCADER@UCALGARY.CA>

BY THE END OF THIS COURSE YOU WILL BE ABLE TO:

- Understand why some plants silicify and others store energy in the form of starch granules
- Discuss how archaeologists use microbotanical particles
- Compare extraction methods
- Evaluate caveats in the interpretation of ancient phytoliths and starches
- Apply taphonomic criteria to archaeological inferences
- Examine academic papers

No Textbook
No Final Exam

Students do not have to pass all components of the class to receive a passing grade in the course.

A+ 94.9–100 %
A 89.9–94.8 %
A- 84.9–89.8 %
B+ 79.9–84.8 %
B 74.9–79.8 %
B- 70.9–74.8 %
C+ 66.9–70.8 %
C 62.9–66.8 %
C- 58.9–62.8 %
D+ 54.9 %– 58.8%
D 49.9–54.8 %
F 49.8 AND BELOW

Office hours are via Zoom exclusively by appointment confirmed by email at least 48 h before

Recording of OFFICE HOURS is strictly forbidden. Students ARE required to show themselves on camera during office hours.

Required readings: These are weekly assignments due every Wednesday, along with guided questions for each set of readings. Assignments are posted one week prior to due date.

Mandatory reading discussion: Online board to critically discuss readings. Due every week on Wednesdays with the Reading Assignments.

Labs: Theoretical/Practical assignments (see topics below) reviewing videos, papers, protocols, etc. These materials will be examined via a weekly quiz / report due every Friday. Assignments are posted one week prior to due date.

READINGS	30%
DISCUSSION	30%
LABS	40%

Note: Students need to see the course components (visually) in order to get ALL the information. In addition, students are expected to have:

- A computer with a supported operating system, as well as the latest security, and malware updates
- A current and updated web browser
- Webcam/Camera (built-in or external)
- Microphone and speaker (built-in or external), or headset with microphone
- Current antivirus and/or firewall software enabled
- Stable internet connection.

ALL ASSESSMENTS ARE OPEN BOOK

Permitted aids:

- Electronic devices
- Notes

COURSE TOPICS

PALAEOETHNOBOTANY

PHYTOLITH AND STARCH LABS
3 HOUR PRACTICUMS

PLANT COMMUNITIES

Phylogenetic considerations
Building reference collections
Databases

PHYTOLITHS FROM SOILS/SEDIMENTS

How to sample sediments and soils
Sample prep
Protocol to follow
Physical and chemical extraction

RESIDUES FROM ARTIFACTS

Protocols
Step by step guide to locating and plotting residues on artifacts
Not everything stuck to a rock is cultural residue

STARCH IN SEDIMENTS AND ARTIFACTS

Protocols
Controls
Risks

DEGRADATION/DIAGENESIS

Myths and realities of preservation
Preservation pathways
Chemical conservation
Microbial degradation

LAB TOUR

Prep room, cleanroom
Safety procedures
Protocols
Do's and don'ts

EXTRACTING PHYTOLITHS FROM BOTANICAL SAMPLES

Targeting parts of the ecosystem
Separating plant tissues
Cleaning
Chemical extraction

PHYTOLITH TAXONOMY

Nomenclature
2-D / 3-D shapes
Classification

MICROBOTANICAL REMAINS FROM CALCULUS

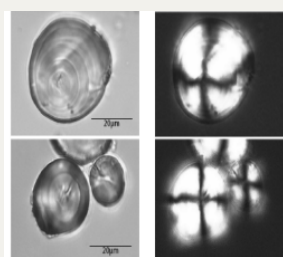
Dental materials
Extraction of calculus
Contamination and decontamination

STARCH TAXONOMY

Nomenclature
2-d/3-d morphologies

QUALITATIVE/QUANTITATIVE DESCRIPTION

Normality
Means and medians
Prominent contributors
PCA



ACADEMIC ACCOMMODATIONS

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services; SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit <https://live-ucalgary.ucalgary.ca/student-services/access>. Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their Instructor or the Department Head. The full policy on Student Accommodations is available at <https://www.ucalgary.ca/legal-services/university-policies-procedures/accommodation-students-disabilities-procedure>.

ACADEMIC MISCONDUCT

“Academic Misconduct” includes such things as cheating, falsification, plagiarism, unauthorized assistance, and failure to comply with exam regulations or an Instructor’s expectations regarding conduct required of Students completing academic assessments. Students who participate in, or encourage the commission of, Academic Misconduct will be subject to disciplinary action which could include Probation, Suspension, or Expulsion from the University. For information on academic misconduct and its consequences, please see the University of Calgary Calendar at <https://www.ucalgary.ca/pubs/calendar/current/k-3.html>

Further support on academic integrity is available at: <https://ucalgary.ca/student-services/student-success/learning/academic-integrity>

INSTRUCTOR INTELLECTUAL PROPERTY

Course materials created by professor(s) (including course outlines, presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the professor(s). These materials may NOT be reproduced, redistributed or copied without the explicit consent of the professor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing.

FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT

Student information will be collected in accordance with typical (or usual) classroom practice. Students’ assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary.

COPYRIGHT LEGISLATION

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (<https://ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-material-protected-copyright-policy>) and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorized sharing of course materials (including instructor notes, electronic versions of textbooks, etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy.

SUPPORT AND RESOURCES:

Please visit the Registrar’s website at: <https://www.ucalgary.ca/registrar/registration/course-outlines> for additional important information on the following:

- Emergency Evacuation/Assembly Points
- Wellness and Mental Health Resources
- Student Success Centre
- Student Ombuds Office
- Student Union (SU) Information
- Safewalk