



**University of Oregon's Geoarchaeological Field School:
Paleoindian Research at the Connley Caves (35LK50)**

Summer 2017 Syllabus

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Course Descriptions:

This course is designed to introduce students to archaeological method and theory, with an emphasis on the role of geoarchaeology and archaeological science in the field-setting. Specifically, the course will demonstrate how geoarchaeology draws from Earth Science thinking, approaches, and techniques to solve archaeological questions. While the course will provide an overview of a range of different environmental settings and archaeological contexts, it will focus on applications to cave and rockshelter environments. Moreover, students will be introduced to a variety of modern applications including 3D photogrammetry, portable x-ray fluorescence spectrometry, thin-section micromorphology, drone mapping, and high-resolution geospatial mapping.

Specific Aims and Objectives:

First and foremost, this course will teach you "how to think like a geoarchaeologist". This course will introduce you to the basic science behind methods commonly employed to address archaeological questions in the field, and will teach you to be able to interpret primary scientific data. We will use a variety of approaches including, textbook readings, lectures, discussions, activities, and hands-on experience with several analytical techniques. By completing this course, you will be able to:

- Understand the main concepts, themes, and approaches that make up the discipline of geoarchaeology, including how it relates to broader archaeological and earth science concerns.
- Understand how a geoarchaeological perspective can be employed to formulate and tackle archaeological research questions in different landscape contexts.

- Acquire a comprehensive overview of the practical approaches that can be employed to study sediments and soils in the course of geoarchaeological research.
- Acquire practical field skills relevant to and crucial for proper academic research or application to the field of Cultural Resource Management (CRM).

Required Texts:

Waters, M. R. (1992). *Principles of geoarchaeology: A North American perspective*. University of Arizona Press.

Field Book for Describing and Sampling Soils, version 3.0
(Order for Free* on <https://www.nrcs.usda.gov> or Download PDF)

*Recommended to order as it is a great field companion

Recommended Texts:

Butzer, K. W. (1982). *Archaeology as human ecology: method and theory for a contextual approach*. Cambridge University Press.

Goldberg, P., & Macphail, R. I. (2008). *Practical and theoretical geoarchaeology*. Blackwell.

Schiffer, M. B. (1987). *Formation processes of the archaeological record*. University of Utah Press.

Schumm, S. A. (1998). *To Interpret the Earth: Ten ways to be wrong*. Cambridge University Press.

Course Agenda:

Week 1: Thinking Like a Geoarchaeologist: Fundamental Concepts

-Introduction to rock cycle; multiple-working hypotheses; abductive reasoning; scale and time; context; natural and cultural transformations.

Week 2: Describing and Interpreting Stratigraphy

-Description and characterization of soils and sediments; interpretation of deposits.

Week 3: Depositional Environments and Site Formation Processes

-Understanding Site Formation Theory; depositional environments

Week 4: Remote Sensing in Archaeology w/ Dr. Timothy DeSmet (SUNY: Binghamton)

-Drone mapping; infrared imaging; 3D landscape reconstruction; Real Time Kinematic GPS survey; geospatial statistics

Week 5: Provenance Research in Archaeology w/ Alex Nyers (Northwest Archaeometrics)

-Introduction to provenance research via x-ray fluorescence spectrometry (XRF)

Week 6: Soil Micromorphology and Archaeological Science w/ Alicia Sawyer (Newcastle University)

-Introduction to thin-section micromorphology and fourier transform infrared spectrometry (FTIR); field sampling strategies