



Introduction to Digital Archaeology

Fall 2023
MW 3:30-5:00 PM

Jason T. Herrmann
Museum 191
jtherrm@upenn.edu

Classroom: Museum 190

Overview

Students in this course will be exposed to the broad spectrum of digital approaches in archaeology with an emphasis on data collection, through a survey of current literature and applied learning opportunities that focus on African American mortuary landscapes of greater Philadelphia. As an Academically Based Community Service (ABCS) course, course material will draw upon real data collected in cooperation with cemetery companies, historic preservation advocacy groups, and members of the African Methodist Episcopal Church to reconstruct the past built and natural landscapes, untangle site taphonomy, and assess our results for each site. Our results will be examined within the broader issues of threatened and lost African American burial grounds and interpretations could be shared with community stakeholders using digital storytelling techniques. This course can count toward the minor in Digital Humanities, minor in Archaeological Science and the Graduate Certificate in Archaeological Science.

Students in this course will:

- Digitize, manage, and interpret historic maps and cemetery records in a geographic information system (GIS).
- Explore digital field recording systems.
- Conduct topographic and aerial surveys using Global Navigation Satellite Systems (GNSS) and Unpiloted Aircraft Systems (UAS/UAVs).
- Participate in a geophysical survey of the near subsurface.
- Create 3D representations of monuments, structures, or landscapes using photogrammetry and scanning.

Upon completion of this course, students should:

- Possess a broad understanding of the array of digital methods that are available for collecting, managing, analyzing, and disseminating archaeological data.
- Be able to design a research project that uses one or more digital methods.
- Assess the outcome of a digital archaeology project.
- Communicate the results of research via digital media.
- Be familiar with current debates in digital archaeology.

- Be aware of the impact that digital methods have on anthropological and archaeological thought and practice.

Course Delivery:

There will be three general types of class meetings: lecture and discussion sessions in which we will cover assigned readings, meetings in the field where we apply one or more of the technologies at our disposal, and ‘work-along’ sessions where we use a digital tool together as a group either on our devices or in the computer lab.

Some of the field excursions will be during the class period and take place at the Woodlands Cemetery, local to the Penn Campus. Other field excursions will visit one of the three field sites west of Philadelphia on weekends, and transportation will be offered. Individual transportation costs could be reimbursed if the student’s schedule will not fit the transportation schedule.

Much of the course content will be served through Canvas. We will use external software for data distribution and processing (e.g. Box, QGIS, ArcGIS Online, etc.). It may be the case that we will use software that requires local installation on a computer. It is therefore important to have access to a reasonably new laptop or desktop for coursework. Where possible, preference will be given to free and open source software (FOSS).

Evaluation:

	Contribution	Description
Participation	10%	Introductory assignment, attendance, your contribution to class discussion, and involvement in class exercises will count toward your participation grade.
Practica	60%	Each stage of the course project will involve one or more skills that will be honed through practica. Assignments serve as a combination instruction set and worksheet, and walk students through collecting, processing, and interpreting a particular type of data related to the overall course project. Practica will be completed in part during work-alongs and partly on the student’s own time outside of class. Skills learned in practica can be applied to your own research material to be presented in the final projects.
Interim Exam	10%	An asynchronous exam will assess students’ retention of key concepts covered in the first 2/3rds of the course.
Final Project	20%	A final project can be one of several things: <ul style="list-style-type: none"> • A report of work undertaken that expands upon one or more practica at the field sites or your own research • An analysis and presentation of digital archaeology data collected by the student in the field at one or more of the field sites and relating to the ABCS goals of the course. • An analysis and presentation of digital archaeology data collected by the student in the field for their thesis/dissertation research. Undergraduate and Graduate Students: <ul style="list-style-type: none"> • A polished public-facing storymap, poster, or manuscript. The report should demonstrate familiarity with more than two digital skills (e.g., mapping, display of 3d data, analysis, etc.) and the goals of the fieldwork. Graduate Students: <ul style="list-style-type: none"> • Additional 3000+ word paper placing this research into theoretical context or explaining its archaeological significance.