

**Department of Anthropology**

**Advanced Analytical Techniques in Archaeology and Bioarchaeology  
Anthropology 9104A  
Fall 2017-18  
Instructor: Andrew Nelson**

Class time: Tuesday 9:30 to 12:30pm  
Classroom: SSC-2257

Instructor: Dr. Andrew Nelson  
Email: [anelson@uwo.ca](mailto:anelson@uwo.ca)  
Office: Social Science Centre 3410  
Office Hours: Wednesdays 4-5pm &  
Thursdays 10:00-12:00  
or by appointment  
Phone: 519-661-2111 x85101

**Overview**

The objective of this course is to explore how advanced analytical techniques are applied in archaeology and bioarchaeology. As such, the focus is not on any specific analytical technique per se. Rather, the course focuses on:

- the theoretical context and paradigm within which techniques are applied and results interpreted
- how such analysis must be done within the interdisciplinary context – including defining interdisciplinarity and exploring the factors that encourage and/or discourage interdisciplinary research
- exploring the nature of collaboration, including issues of intellectual property

Course assignments will include ethnographies of successful interdisciplinary projects across campus, an analysis of how granting agencies shape research and a detailed paper exploring a particular analytical technique and its application that is relevant to the students' research.

**Learning outcomes**

By the end of the course you should be able to:

- understand the nature of interdisciplinary research
- work with your peers in a collaborative framework
- understand the principles of a range of advanced analytical techniques and to identify how those techniques can be useful to your research

## Weekly Discussion Topics and Example Readings

<u>Date</u>	<u>General Topic</u>	<u>Specific Topics</u>	<u>Example Readings</u>
Sept 12	Archaeological Science/ Conservation-Technical Art History	Archaeological Science or Scientific Archaeology?	Hermens (2012); Jones (2002); Martín-Torres & Killick (2015); Pye (2010)
Sept 19	interdisciplinarity		Byrne et al. (2009) Choi & Pak (2006) Stahl et al. (2004)
Sept 26	collaboration / intellectual property		Delgadillo (2016); Gibbs (2013); Hollowell & Nicholas (2008); Nicholas & Bannister (2004)
Oct 3	ethics  how do granting agencies shape research programs?	ethics of conservation ethics of authentication	Clavir (2002) Sease (1997)  NSERC – SSHRC strategic plans CAGS (2004)
Oct 10	reading break		
Oct 17	Assignment #1 discussion		
Oct 24	Analytical Techniques in General Paleoimaging	CT/microCT/laser/SEM	Malainey (2011); Beckett (2014); Chhem (2008)
Oct 31	Archaeological Chemistry I	visit to SSW? Diagenesis	Doménech-Carbo & Osete- Cortina (2016); Pollard (2013)
Nov 7	Archaeological Chemistry II		Bertrand et al. (2012); Madariaga (2015)
Nov 14	Dating Techniques		Hughes (2017); Tomassetti et al. (2016); Wasef et al. (2015)
Nov 21	Remote Sensing		Agapiou & Lysandrou (2015); Tapete & Cigna (2017)
Nov 28	Topic left open		
Dec 5	Assignment #2 discussion		

The readings are all available on OWL - <https://owl.uwo.ca/portal>

## Evaluation

- Weekly reflection papers – 20%
- Assignment #1 – interdisciplinary research teams – Oct 17<sup>th</sup> – 30%
- Assignment #2 – 30%
- Participation – 20%

## Details of the Assignments

Weekly assignments = write a 1-2 page reflection on the week's readings. What is the key point of the readings? How are they relevant to you?

- find two more articles that are relevant to the week's discussion and be prepared to describe them to the group

### Assignment #1

Go and talk to three or four researchers who work in the interdisciplinary context. Discuss what works and what doesn't. What are the benefits of working in the interdisciplinary context vs the disadvantages? Are they multi- inter- or transdisciplinary? Distill out the dos and don'ts of interdisciplinary research.

Jessica Grahn – Dept. Psychology – neuroscience and music

<http://www.jessicagrahn.com/>

David Holdsworth – Dept. Medical Biophysics - imaging

[http://boneandjoint.uwo.ca/about\\_us/people/researcher\\_bios/holdsworth.html](http://boneandjoint.uwo.ca/about_us/people/researcher_bios/holdsworth.html)

Darren Meister – Ivey/Engineering – entrepreneurship

<https://www.ivey.uwo.ca/faculty/directory/darren-meister/>

Charlie Trick – Dept. Biology – ecosystem health (note – he is away Sept 20-27)

<http://publish.uwo.ca/%7Ecyano/UWOTrick/Welcome.html>

### Assignment #2

Pick an analytical technique that could be useful to your research program. Write a paper on the basic science underlying the technique, how it has previously been used in the archaeological science context and how you could use it. Include a discussion of the costs involved in implementing the technique and likely sources for funding.

## Participation

This class does not follow a lecture format. Thus, you are expected to come to each class having read the readings (and done your reflection piece and found two more articles) and ready to contribute to a discussion of the topic(s) at hand. The more you engage in the course, the more you will get out of it, and the better your participation grade will be.

## Western's Academic Policies:

All students should familiarize themselves with Western's current academic policies regarding accessibility, mental wellbeing, accommodation for medical illness, and plagiarism and scholastic offences. These policies are outlined with links to the full policies at [http://anthropology.uwo.ca/undergraduate/course\\_information/academic\\_policies.html](http://anthropology.uwo.ca/undergraduate/course_information/academic_policies.html)