

Department of Anthropology, University of Toronto Mississauga
 ANT338H5S Lab Methods in Biological Anthropology
 Winter 2026

Course Title	Lab Methods in Biological Anthropology
Lecture times & format	Monday, 9-10am, IB 280
Practicals	Practical 1: Monday 10 am-12pm, DV 2047 Practical 2: Monday 12-2pm, DV 2047
Course website	https://q.utoronto.ca/courses/415690
Instructor	Dr. Creighton Avery
Email	Creighton.avery@utoronto.ca
Office	HSC354
Office hour times	Wednesday, 1-2pm, HSC 354
Teaching Assistants emails and office hours	TBD
Required reading/textbook	No required textbook; see Quercus for updated list of weekly required readings
Course description	This lab methods course focuses on laboratory techniques used by biological anthropologists to assess growth, health, and activity of past human populations. In this course, students will gain practical, hands-on experience in osteometric, imaging, and destructive analysis, used in bioarchaeological studies of the past. Guest lectures will provide students with hands-on experiences of gathering and analyzing data, ensuring students gain valuable knowledge of data management and analysis using applications suitable to research settings.
Learning outcomes	By the end of the course students should be able to: <ol style="list-style-type: none"> 1. Understand basic theoretical foundations of assessment for research in osteometric, imaging, and destructive analyses in bioarchaeology; 2. Apply bioarchaeological methods to skeletal material and associated samples; 3. Perform preliminary data analysis; 4. Critically assess peer-reviewed journal articles in biological anthropology; 5. Analyze, summarize, and present scientific findings from biological anthropology research.
Course assessments	Weekly Lab Assessments (3% x 8 = 24%), due weekly throughout the semester Ten lab activities will be offered during the semester, covering different topics (Weeks 1 to 10). After completing the activities during the assigned lab time, complete the

	<p>write up and submit it by the end of the corresponding class. Your top eight out of a possible ten labs will contribute to your final grade, but you're welcome to complete all ten. This will help you achieve LO 1, 2, 3, and 5.</p> <p>Weekly Reading Response (2% x 9 = 18%), due throughout the semester Each week, you'll reflect on the required readings, critically assessing the methodologies used, approaches taken, and analysis of the material. Your top nine out of a possible eleven weeks will contribute to your final grade, but you're welcome to complete all eleven. This will help you achieve LO 4, and 5.</p> <p>Original Research Presentation (25%), due March 23 and March 30, 2026, during your assigned lab. Using one of the questions and datasets provided, you and a partner will develop a research hypothesis, analyze the data, and give a 10-minute presentation of the results of your study to the class. Presentations will be held in class during the last two weeks of the semester. This will help you achieve LO 1, 2, 3, 4, and 5.</p> <p>Final Exam (33%), scheduled during the exam period. Covering lecture and lab content throughout the semester. This will help you achieve LO 1, 2, 3, and 5.</p>
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COURSE OUTLINE

WEEKLY COURSE OUTLINE

Lectures will be delivered in class, with opportunities for students to ask questions and seek clarification. Slides will also be available on Quercus. During labs students will get hands on experience with data collection and analysis with a variety of methods, working in pairs or small groups.

Week	Date	Lecture	Lab	Readings
1	January 5	Introduction	Ethics in Bioarchaeology	A, B
Section 1				
2	January 12	Growth and Development	Stature and body mass	C, D
3	January 19	Population Affinity	Metrics and Non-metrics	E, F
4	January 26	Diet and Nutrition	Dental Health Assessment	G, H
5	February 2	Stable Isotopes	Incremental analysis	I, J

Section 2				
6	February 9	Trauma Analysis	Trauma with Maia Magalhaes-Filion (UofT)	K, L
-	February 16	<i>No class – Reading Week</i>		
7	February 23	Paleopathology	Analyzing aDNA with Dr. Hider (Sir Wilfrid Laurier University)	M, N
8	March 2	Paleoimaging	Measuring Cortical Thickness with Maris Schneider (Western University)	O, P
9	March 9	Paleoparasitology	Microscopy with Dr. Leger (McMaster University)	Q, R
10	March 16	Metabolic Diseases	Tracking Interglobular Dentine	S, T
Section 4: Presentations				
11	March 23	Paleoproteomics	Presentation 1	None
12	March 30	Review	Presentation 2	None

For Winter 2026 “S” term courses: March 16, 2026, is the deadline to drop a S course from academic record and GPA.

ASSIGNED READINGS

Readings provided below are tentative and subject to change. Please see the Quercus homepage for any changes.

- A. Thomas, Jayne-Leigh, and Krystiana L. Krupa. 2021. Bioarchaeological ethics and considerations for the deceased. *Human Rights Quarterly* 43(2): 344-354. DOI: 10.1353/hrq.2021.0022.
- B. DeWitte, Sharon N. 2015. Bioarchaeology and the ethics of research using human skeletal remains. *History Compass* 13(1): 10-19. DOI: 10.1111/hic3.12213.
- C. White, Sina D., Sophie L. Newman, Charlotte Primeau, Patrick Mahoney, & Chris A. Deter. 2024. The impact of urbanization on growth patterns of non-adults in medieval England. *International journal of Osteoarchaeology* 34(6): e3347. DOI: 10.1002/oa.3347.
- D. Hansen, David, W., Sharon N. DeWitte, & Philip Slavin. 2024. Dying of pestilence. Stature and mortality from the Black Death in 14th century Kyrgyzstan. *American Journal of Biological Anthropology* 185(3): e25009. DOI: 10.1002/ajpa.25009.

- E. Fidalgo, D., V. Wesolowski, & M. Hubbe. 2022. Biological affinities of Brazilian pre-colonial coastal communities explored through bootstrapped biodistances of dental non-metric traits. *Journal of Archaeological Science* 138: 105545. DOI: 10.1016/j.as.2022.105545.
- F. Michael, D. E., L. Fibiger, I. Moutafi, M. Slaus, M. Katsimicha, M. Novak, & B. Molloy. 2023. Exploring connectivity in Late Bronze Age/Early Iron Age Greece and the Balkans using cranial non-metric analysis. *Archaeological and Anthropological Science* 15: 165. DOI: 10.1007/s12520-023-01862-w.
- G. Hosek, L., A. L. Watern-Smith, & C. C. Watson. 2020. The body politic and the citizen's mouth: Oral health and dental care in nineteenth-century Manhattan. *Historic Archaeology* 54: 138-159. DOI: 10.1007/s41636-019-00215-6.
- H. Bertilsson, C., L. Nylund, M. Vretemark, & P. Lingstrom. 2021. Dental markers of biocultural sex differences in an early modern population from Gothenburg, Sweden: caries and other oral pathologies. *BMC Oral Health* 21: 304. DOI: 10.1186/s12903-021-01667-0.
- I. Bourbou, C., G. Arenz, V. Dasen, & S. Losch. 2019. Babes, bones, and isotopes: A stable isotope investigation on nonadults from Aventicum, Roman Switzerland (first-third century CE). *International Journal of Osteoarchaeology* 29: 974-985. DOI: 10.1002/oa.2811.
- J. Schats, R., I. van Hattum, L. M. Kootker, M.L.P. Hoogland, & A.L. Waters-Rist. 2021. Diet and urbanization in medieval Holland. Studying dietary change through carious lesions and stable isotope analysis. *International Journal of Osteoarchaeology* 32: 142-155. DOI: 10.1002/oa.3051.
- K. Mant, M., C. de la Cova, M. B. Brickley. 2021. Intersectionality and trauma analysis in bioarchaeology. *American Journal of Physical Anthropology* 174: 583-594. DOI: 10.1002/ajpa.24226.
- L. Morgan, B., K. Prakash, J. C. Mayberry, M. B. Brickley. 2022. Throacic trauma: Clinical and paleopathological perspectives. *International Journal of Paleopathology* 39: 50-63. DOI: 10.1016/j.ijpp.2022.09.003.
- M. Fleskes, R. E., H. M. Palacios, H. Budner, D. Kollmann, C. Newby-Alexander, R. Harder, D. A. Bolnick, M. Pollard, P. Pollard, T. G. Schurr, & D. A. Brown. 2025. Archaeogenomic analysis of nineteenth-century burials at Saint Mary's Basilica: An intersectional analysis of religion, race, and migration. *American Journal of Biological Anthropology* 187: e70110. DOI: 10.1002/ajpa.70110.
- N. Hider, J., A. T. Duggan, J. Klunk, K. Eaton, G. S. Long, E. Karpinski, V. Giuffra, L. Ventura, A. Fornaciari, G. Fornaciari, G. B. Golding, T. L. Prowse, & H. N.

Poinar. 2022. Examining pathogen DNA recovery across the remains of a 14th century Italian friar (Blessed Sante) infected with *Brucella melitensis*. *International Journal of Paleopathology* 39: 20-34. DOI: 10.1016/j.ijpp.2022.08.002.

- O. Sutherland, M. L. 2019. Use of Computed Tomography scanning in a 'virtual' bioarchaeology of care analysis of a Central Coast Peruvian mummy bundle. *International Journal of Paleopathology* 25 : 129-138. DOI : 10.1016/j.ijpp.2018.12.006.
- P. Poeta, L. S., M. P. Ordonez, E. Fournier, & A. J. Nelson. 2022. Correlative tomography and authentication features of a shrunken head (*tsantsa*). *PLoS ONE* 17(8): e0270305. DOI: 10.1371/journal.pone.0270305.
- Q. Ledger, M. L., R. Redfern, & P. D. Mitchell. 2024. Intestinal parasitic infection in Roman Britain: Integrating new evidence from Roman London. *Britannia* 2014: 1-17. DOI: 10.1017+S0068113X2400031X.
- R. Fonzo, M., A. B. Scott, & M. Duffy. 2020. Eighteenth Century Urban Growth and Parasite Spread at the Fortress of Louisbourg, Nova Scotia, Canada. In T. K. Betsinger, S. N. DeWitte (Eds.), *The Bioarchaeology of Urbanization*. Springer Nature Switzerland. Pp. 295 - 316. DOI: 10.1007/978-3-030-53417-2_12.
- S. Lockau L., S. Atkinson, S. Mays, T. Prowse, M. George, A. Sperduti, L. Bondioli, C. Wood, M. Ledger, & M.B. Brickley. 2019. Vitamin D deficiency and the ancient city: Skeletal evidence across the life course from the Roman period site of Isola Sacra, Italy. *Journal of Anthropological Archaeology* 55: 101069. DOI: 10.1016/j.jaa.2019.101069.
- T. Veselka, B., M.B. Brickley, L. D'Ortenzio, B. Kahlon, M. L. P Hoogland, A. L. Waters-Rist. 2019. Micro-CT assessment of dental mineralization defects indicative of Vitamin D deficiency in two 17th-19th century Dutch communities. *American Journal of Biological Anthropology* 169(1): 122-131. DOI" 10.1002/ajpa.23819.

IMPORTANT COURSE INFORMATION

ONLINE COURSE REQUIREMENTS

Meetings with the instructor can occur in person or via Zoom. For meetings via Zoom, students must register for a UTM Zoom account using their UTORid and password. (Web Portal Login: <https://utoronto.zoom.us>). For more information about minimum technical requirements for students to access online learning, see [Recommended Technology Requirements for Remote/Online Learning](#) published by the Office of the Vice-Provost, Students.

USE OF GENERATIVE ARTIFICIAL INTELLIGENCE

Generative Artificial Intelligence (AI), and specifically foundational models that can create writing, computer code, and/or images using minimal human prompting, are proliferating and becoming ubiquitous.

In this course, students can use Generative AI in certain instances or specific ways. See below for some examples. If you are unclear if you may use AI in a particular way in this course, please reach out to the instructor to discuss options.

- Students may use artificial intelligence tools for creating an outline for an assignment, but the final submitted assignment must be original work produced by the student alone
- Students may use artificial intelligence tools for critiquing and editing as assignment for purposes of revision, but the first draft must be original work produced by the student alone
- Students may use artificial intelligence for gathering information across sources and assimilating it for understanding, but the assignment must be the original work produced by the student

ASSIGNMENT SUBMISSION POLICY

Select assignments in this course will be submitted electronically through Quercus, including Paper Critique and portions of the Presentation.

Normally, students will be required to submit their course work to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (<https://uoft.me/pdt-faq>).

If students choose to opt-out of submitting their essays to the University's plagiarism detection tool, they must notify the instructor. Students who choose to opt-out of using the plagiarism detection tool must do so in writing by email to the course instructor before **February 1, 2026**. Assignments without plagiarism detection submission must be accompanied by an outline, first draft and an annotated bibliography to demonstrate the paper's originality.

POLICY FOR MISSED AND LATE ACADEMIC TERM WORK

LATE ASSIGNMENTS

Late assignments, without previous written permission (e.g., accommodations, special consideration requests) are subject to a late penalty of 5% per day, including weekend days. Late penalties will be applied for 20 days, including weekends, after which the assignment will not be accepted and a mark of zero will be applied.

SPECIAL CONSIDERATION FOR MISSED AND LATE ACADEMIC TERM WORK

Students who miss term work (tests, assignments, labs) because of a temporary absence for a legitimate reason will receive reasonable academic consideration, such as the opportunity to write a make-up or to have the work graded without a late penalty being applied, without the need to provide supporting documentation.

Legitimate reasons for absence include:

- Illness or injury
- Personal or family emergencies
- Bereavement
- University sponsored events

The following are not considered legitimate reasons for absence:

- Personal social obligations
- Travel unrelated to the student's academic program
- Technological issues
- Avoidance of assessment or deadlines

To receive academic consideration for legitimate reasons, **within 72 hours of the missed deadline or test** students must use the [UTM Anthropology departmental process for special consideration](#).

Students with departmental approval for special consideration will be given an extended deadline with no late penalty or the opportunity to write a make-up.

ACADEMIC INTEGRITY

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The [University of Toronto's Code of Behaviour on Academic Matters](#) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences.

It is your responsibility to understand the [Code of Student Conduct](#) and the [Code of Behaviour on Academic Matters](#)

Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

- Using or possessing unauthorized aids.
- Looking at someone else's answers during an exam or test.
- Misrepresenting your identity.

In academic work:

- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

On sharing instructor's intellectual property covered by the Canadian Copyright Act:

- Posting test, essay, or exam questions to message boards or social media.
- Creating, accessing, and sharing assessment questions and answers in virtual course groups.

Lesser-known academic offenses:

- Accessing unauthorized resources (search engines, chat rooms, Reddit, etc.) for assessments.
- Using technological aids (e.g. software) beyond what is listed as permitted in an assessment.
- The unauthorized use of Artificial Intelligence (AI) tools to assist in academic work.

Plagiarism: It shall be an offence for a student knowingly:

(a) to forge or in any other way alter or falsify any document or evidence required by the University, or to utter, circulate or make use of any such forged, altered or falsified document, whether the record be in print or electronic form;

(b) to use or possess an unauthorized aid or aids or obtain unauthorized assistance in any academic examination or term test or in connection with any other form of academic work;

(c) to personate another person, or to have another person personate, at any academic examination or term test or in connection with any other form of academic work;

(d) to represent as one's own any idea or expression of an idea or work of another in any academic examination or term test or in connection with any other form of academic work, i.e. to commit plagiarism (for a more detailed account of plagiarism, see Appendix "A")

(e) to submit, without the knowledge and approval of the instructor to whom it is submitted, any academic work for which credit has previously been obtained or is being sought in another course or program of study in the University or elsewhere;

(f) to submit any academic work containing a purported statement of fact or reference to a source that has been concocted.

(cited from the Code of Behaviour on Academic Matters)

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other [institutional resources](#).

COURSE COMMUNICATION

Please use your utoronto.ca email address to ensure that your email messages are not filtered out by spam software and include "**ANT338**" in the subject line. I will try to reply to all appropriate emails within 48 hours on business days. Keep your emails brief, and come to my office for longer discussions.

NOTICE OF VIDEO RECORDING AND SHARING

This course, including your participation, may be recorded on video and will be available to students in the course for viewing remotely and after each session. Course videos and materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation, and are protected by copyright. Do not download, copy, or share any course or student materials or videos without the explicit permission of the instructor. For questions about recording and use of videos in which you appear please contact your instructor.

CLASSROOM CONDUCT

To be respectful of all individuals in the class, please follow the following guidelines:

- All cellphones must be silent during the lectures.
- You are expected to abide by the [University of Toronto's code of student conduct](#).
- Students who do not abide by the code of conduct will be asked to leave the lecture.

FINAL EXAM

The final exam will be held during the UTM final exam period designated by the Registrar's Office. The final exam will be made up of true/false, multiple choice questions, matching, and short answer questions, written in 2 hours. The exam will cover all of the lectures, readings, and practicals from the entire course. Please remember to bring your student identification card to the exam.

If you miss the exam: Students who cannot write a final examination due to illness or other serious causes must **file an online petition within 72 hours of the missed examination to the Registrar's Office** (NOT the anthropology departmental system).

Original supporting documentation must also be submitted to the Office of the Registrar within 72 hours of the missed exam. Late petitions will NOT be considered. Students must also record their absence on ACORN on the day of the missed exam or by the day after at the latest. Upon approval of a deferred exam request, a non-refundable fee of \$70 is required for each examination approved. If you would like to see your final exam after it is written then you must contact the Registrar's Office. You can find the link at [Special Consideration for Missed Term Work](#).

For more information about final exams, please review the following links:

- [Final Exams \(UTM Academic Calendar\)](#)
- [Missed Final Exams \(UTM Office of the Registrar\)](#)

FINAL MARKS

Final marks are tentative until approved by the Department of Anthropology Chair, the Office of the Dean, and recorded in the Office of the Registrar.

[Final Grades \(UTM Academic Calendar\)](#)

RE-GRADING POLICY

A student who believes that their written term work has been unfairly marked may ask the person who marked the work for re-evaluation. Students have up to one month from the date of return of an item of term work to inquire about the mark. If the student is not satisfied with this re-evaluation, they may appeal to the instructor in charge of the course if the work was not marked by the instructor (e.g., was marked by a TA). Such re-marking may involve the entire piece of work, and may raise or lower the mark.

See [Re-marking Pieces of Term Work \(UTM Academic Calendar\)](#) for further details.

STUDENT CONDUCT

If a student wishes to record, photograph, or otherwise reproduce lecture presentations, course notes or other similar materials provided by instructors, they must obtain the instructor's written consent beforehand. Otherwise, all such reproduction is an infringement of copyright and is absolutely prohibited. In the case of private use by students with disabilities, the instructor's consent will not be unreasonably withheld.

See [Taping / Recording / Photographing Lectures is Not Allowed](#) (UTM Academic Calendar) for further details.

SUPPORT AND RESOURCES

ACCESSIBILITY ACCOMMODATION

Students with diverse learning styles and needs are welcome in this course. If you have a disability/health consideration that may require accommodations, please consult

with [UTM's Accessibility Services](#) at the beginning of your courses so that the proper supports are in place.

If there are any additional concerns with regard to this course, please reach out to the instructor in advance to discuss how we might work together to ensure a successful semester.

EQUITY, HUMAN RIGHTS, AND RESPECT FOR DIVERSITY

At the University of Toronto, we strive to be an equitable and inclusive community, rich with diversity, protecting the human rights of all persons, and based upon understanding and mutual respect for the dignity and worth of every person. We seek to ensure to the greatest extent possible that all students and employees enjoy the opportunity to participate as they see fit in the full range of activities that the University offers, and to achieve their full potential as members of the University community.

See [U of T Statement on Equity, Diversity, and Excellence](#) for further information.

RELIGIOUS OBSERVANCE ACCOMMODATION

The University of Toronto welcomes and includes students, staff and faculty from a broadly diverse range of communities and backgrounds. The University community comprises one of the most diverse campus populations anywhere. Students, staff and faculty have a wide range of backgrounds, cultural traditions and spiritual beliefs. With reference to the University's commitment to human rights as articulated in the [Statement on Human Rights](#) and in accordance with the accommodation principles of the Ontario [Human Rights Code](#), this policy is concerned with accommodations for students with respect to observances of religious holy days.

See [U of T Statement on Religious Observances, Policy on Scheduling of Classes and Examinations and Other Accommodations for Religious Observances](#) for more information.

STUDENT HEALTH & WELL-BEING SUPPORT

For resources to support student health and well-being, visit [Student Health & Well-being Support \(UTM Health & Counselling Centre\)](#).

ACADEMIC SKILLS CENTER

The Robert Gillespie Academic Skills Centre (RGASC) is UTM's hub for learning and teaching. Visit [Academic Skills Centre](#) to learn about academic skill development available for students.