

ADVANCED BIOARCHAEOLOGY AND SKELETAL BIOLOGY

Winter 2023

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Course Description

The analysis of human skeletal samples, including such topics as paleopathology, paleodemography, and ethics.

Course Objectives

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

- Describe methods used in major areas of inquiry in bioarchaeology
- Identify and articulate ethical, theoretical and methodological challenges posed by the nature of skeletal samples and research
- Identify major themes in bioarchaeological research
- Design, undertake and present bioarchaeological research using available skeletal data

Required Materials and Texts

There is no required textbook for this course. Most of the required readings will be academic articles or book chapters, which are accessible through McMaster's library. In some cases, where a digital copy is not easily available, a copy will be posted on Avenue to Learn.

Class Format

This class is being held in-person. You are highly encouraged to come to class as your participation is incorporated in your final mark. The class is broken into two parts: a live lecture, followed by a student-led class discussion and/or a practical. There will also be time allotted throughout the term for you to work on your end of term project.

Course Evaluation – Overview

1. Attendance	5%
2. Reading Response	5%
3. Class Discussion Leaders	20%
4. Poster Project	
a. Poster Proposal	25%
b. Poster Abstract	15%
c. Poster	30%

Course Evaluation – Details

Attendance (5%), Ongoing Throughout the Term

A portion of your grade will be based on your attendance and participation in this class. There will be a sign-in sheet to track your attendance and you are expected to stay for the entire scheduled session. If you are unable to attend class due to illness, please try to email Dr. Siek beforehand.

Reading Response (5%), Ongoing Throughout the Term

You will prepare a short reply/commentary for each week's readings/topic. These are intended as practice for the critical analysis of readings and preparation for in-class discussion. Further details will be given in class.

Class Discussion Leaders (20%), Ongoing Throughout the Term

On select weeks throughout the term, working in groups of 2, students will give an overview of the required readings and then lead the class in discussion. The overview will be given through a *Pecha Kucha*-style presentation. Further details will be given in class.

Poster Project

Throughout the term you will work on a research project using open-source bioarchaeological data. There will be some weeks where you will be given class time to work on your project and confer with Dr. Siek. This project is divided into three components and will culminate in an in-class Poster Conference. This project is comprised of three components.

1) Poster Proposal (25%), due 6 February

You will prepare a proposal for your poster. This will give you the opportunity to create a clear plan for your project, early in the course. Your proposal should include a tentative title, a description of your project, and an annotated bibliography. Further details will be given in class.

2) Poster Abstract (15%), due 20 March

You will prepare an abstract for your poster, which clearly states the aims of your project, the context and background, the sources investigated, the preliminary results, their possible implications, and be summarized with a conclusion. Further information will be given in class.

3) Poster (30%), due 3 April

Your poster will be presented to the class during the in-class Poster Conference. This will also include a brief Q&A period. Further details regarding the poster and presentation format will be given in class.

Weekly Course Schedule and Required Readings

Week 1 (9 January)

Course Introduction and Review

Readings:

None.

Week 2 (16 January)

Bioarchaeology

Readings:

Charlier P, Augias A, Benmoussa N, Rainsard P, Froesch P, Richardin P, Froment A, Bianucci R, Appenzeller O, Perciaccante A, Lippi D, Prades L. 2020. The mandible of Saint-Louis (1270 AD): Retrospective diagnosis and circumstances of death. *Journal of Stomatology, Oral and Maxillofacial Surgery* 121: 172-174.

Snoddy AME, Beaumont J, Buckley HR, Colombo A, Halcrow SE, Kinaston RL, Vlok M. 2020a Comment on Charlier et al., 2019: "The Mandible of Saint-Louis (1270 AD): Retrospective diagnosis and circumstances of death". *Journal of Stomatology, Oral and Maxillofacial Surgery* 121: 192-197.

Charlier P, Froesch P, Prades L, Augias A, Perciaccante A, Appenzeller O, Lippi D, Ballonii S, Bianucci R. 2020. Further anthropological and pathological arguments related to St Louis' scurvy and infection signs on the Notre-Dame mandible (Paris, France). *Journal of Stomatology, Oral and Maxillofacial Surgery* 121: 192-197.

Snoddy AME, Beaumont J, Buckley HR, Colombo A, Halcrow SE, Kinaston RL, Vlok M. 2020b Sensationalism and speaking to the public: Scientific rigour and interdisciplinary collaborations in palaeopathology. *International Journal of Paleopathology* 28: 88-91.

Notes: Class Discussion Leader Week. *I advise you complete the readings in the order as shown above or else the commentary and reply might not make sense.

Week 3 (23 January)

Ethics, Death and Human Skeletal Remains

Readings:

Buikstra JE. "Knowing Your Audience: Reactions to the Human Body, Dead and Undead". In Buikstra JE (ed.), *Bioarchaeologists Speak Out: Deep Time Perspectives on Contemporary Issues*. Switzerland: Springer. Pp. 19-57.

Notes: Class Discussion Leader Week

Week 4 (30 January)

Sex Estimation

Readings:

Tallman SD, Kincer CD, Plemons ED. 2021. Centering Transgender Individuals in Forensic Anthropology and Expanding Binary Sex Estimation in Casework and Research. *Forensic Anthropology*: 1-20.

Schall JL, Rogers TL, Deschamps-Braly JC. 2020. Breaking the binary: The identification of trans-women in forensic anthropology. *Forensic Science International* 309: 110220.

Notes: Class Discussion Leader Week

Week 5 (6 February)

Age Estimation

Readings:

Appleby J. 2017. Ageing and the Body in Archaeology. *Cambridge Archaeological Journal* 28: 145-163.

Cave C, Oxenham M. 2014. Identification of the archaeological 'invisible elderly': An approach illustrated with an Anglo-Saxon example. *International Journal of Osteoarchaeology* 26: 163-175.

Notes: Class Discussion Leader Week; Poster Proposal due on Avenue to learn by 23:59.

Week 6 (13 February)

Paleodemography and Paleoepidemiology

Readings:

DeWitte SN. 2018. Demographic anthropology. *American Journal of Physical Anthropology* 165: 893-903.

Zuckerman M, Harper K, Armelagos G. 2015. Adapt or die: Three case studies in which the failure to adopt advances from other fields has compromised paleopathology. *International Journal of Osteoarcheology* 26: 375-383.

Marques C, Roberts C, Matos VMJ, Buikstra JE. 2021. Cancers are rare diseases: terminological, theoretical, and methodological biases. *International Journal of Paleopathology* 32: 111-122.

Notes: Class Discussion Leader Week

Week 7 (20 February)

Reading Week ☺

Week 8 (27 February)

Non-Adults

Readings:

Lewis M. 2006. *The Bioarchaeology of Children: Perspectives from Biological and Forensic Anthropology*. Cambridge University Press. (Chapter 1)

Notes: Guest Lecture by Meghan Langlois

Week 9 (6 March)

Paleoimaging

Readings:

Villa C, Frohlich B, Lynnerup N. 2019. "The role of imaging in paleopathology". In Buikstra JE (ed.), *Ortner's Identification of Pathological Conditions in Human Skeletal Remains*. Academic Press. Pp. 169-182.

Anderson AS, Sutherland ML, O'Donnell L, Hill EC, Hunt DR, Blackwell AD, Gurven MD. 2021. Do computed tomography findings agree with traditional osteological examination? The case of porous cranial lesions. *International Journal of Paleopathology* 33: 209-219.

Notes: Guest Lecture by Brianne Morgan

Week 10 (13 March)

Paleopathology

Readings:

Mays S. 2018. How should we diagnose disease in paleopathology? Some epistemological considerations. *International Journal of Paleopathology* 20:12–19.

Notes: Guest Lecture by Amanda Cooke

Week 11 (20 March)

Human Dentition

Readings:

D’Ortenzio L, Ribot I, Raguin E, Schattmann A, Bertrand B, Kahlon B, Brickley M. 2016. The rachitic tooth: A histological examination. *Journal of Archaeological Science* 74: 152-163. DOI: 10.1016/j.jas.2016.06.006

Veselka B, Snoeck C. 2021. Interglobular dentine attributed to vitamin D deficiency visible in cremated human teeth. *Scientific Reports* 11: 20958. DOI: 10.1038/s41598-021-00380-w

Wedel VL, Wescott DJ. 2016. Using dental cementum increment analysis to estimate age and season of death in African Americans from an historical cemetery in Missouri. *International Journal of Paleopathology* 15: 134-139.

Notes: Guest Lecture by Lily Godawa; Poster Abstract due on Avenue to learn by 23:59.

Week 12 (27 March)

Ancient DNA

Readings:

Duchêne S, Ho SYW, Carmichael AG, Holmes EC, Poinar H. 2020. The recovery, interpretation and use ancient pathogen genomes. *Current Biology* 30: R1215-1231. DOI: 10.1016/j.cub.2020.08.081

Vågene ÅJ, Herbig A, Campana MG, García NMR, Warinner C, Sabin S, Spyrou MA, Valtueña AA, Huson D, Tuross N, Bos KI, Krause J. 2018. *Salmonella enterica* genomes from victims of a major sixteenth-century epidemic in Mexico. *Nature Ecology & Evolution* 2: 520-528. DOI: 10.1038/s41559-017-0446-6

Notes: Guest Lecture by Jessica Hider

Week 13 (3 April)

Poster Conference

Readings:

None.

Notes: Posters are due on Avenue by the start of class.

Week 14 (10 April)

Easter Monday – No Class

Course Policies

Submission of Assignments

All assignments are to be submitted to Avenue to Learn on the due date, by 23:59 EST, unless stated otherwise. If you have technical problems when submitting an assignment, take a screenshot that shows your submission screen and desktop clock/date as a timestamp. Refer to Avenue to Learn Support page for help.

Late Submissions and Extensions

You are expected to submit all assignments on the due date. All assignment deadlines are clearly marked in the syllabus and are made known to students at the beginning of the term by the instructor. There will be a 5% penalty for every day the assignment is late, for up to five days, including weekends. After five days from the original deadline, late submissions will not be accepted. If you feel that your assignment will be late due to reasons out of your control, please contact Dr. Siek in advance to discuss the matter with him. Extensions will only be given under extenuating circumstances and will be no longer than five calendar days after the original due date. Ensure you frequently make backup copies of your work and please note that having a lot of other course work is not grounds for an extension.

Assignment Regrading

If you disagree with a grade that you have received, please follow these steps:

1. Wait 24 hours after viewing your mark, then re-read your assignment. Consider the assignment criteria guidelines and your instructor's feedback.
2. Seek more feedback: if you require more information about your grade, contact Dr Siek and ask for further feedback.
3. Formally request a re-appraisal via email to Dr Siek. Write a 400-word (min.) statement explaining why you believe the assessment was mistaken and submit it to Dr Siek along with the original assignment (with feedback). Your statement must directly reference the assignment guidelines.
4. Dr Siek will re-assess your work, and return it to you within 72 hours. Please note, requesting a re-appraisal does not guarantee that your grade will be increased.

Grades

Grades will be based on the McMaster University grading scale:

MARK	GRADE	Qualitative Scale (Unofficial)
90-100	A+	Exceptional performance: strong evidence of original thinking; good organization; capacity to analyze and synthesize; superior grasp of subject matter with sound critical evaluations; evidence of extensive knowledge base.
85-90	A	
80-84	A-	
77-79	B+	Competent performance: evidence of grasp of subject matter; some evidence of critical capacity and analytic ability; reasonable understanding of relevant issues; evidence of familiarity with the literature.
73-76	B	
70-72	B-	
67-69	C+	Adequate performance: understanding of the subject matter; ability to develop solutions to simple problems in the material; acceptable but uninspired work, not seriously faulty but lacking style and vigour.
63-66	C	
60-62	C-	
57-59	D+	
53-56	D	

MARK	GRADE	Qualitative Scale (Unofficial)
50-52	D-	
0-49	F	Inadequate performance: little or no evidence of understanding of the subject matter; weakness in critical and analytic skills; limited or irrelevant use of the literature.

Avenue to Learn

In this course we will be using Avenue to Learn. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, usernames for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

Turnitin.com

In this course we will be using a web-based service (Turnitin.com) to reveal plagiarism. Students will be expected to submit their work electronically to Turnitin.com and in hard copy so that it can be checked for academic dishonesty. Students who do not wish to submit their work to Turnitin.com must still submit a copy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, etc.). To see the Turnitin.com Policy, please to go www.mcmaster.ca/academicintegrity.

University Policies

Faculty of Social Sciences E-mail Communication Policy

Effective September 1, 2010, it is the policy of the Faculty of Social Sciences that all e-mail communication sent from students to instructors (including TAs), and from students to staff, must originate from the student's own McMaster University e-mail account. This policy protects confidentiality and confirms the identity of the student. It is the student's responsibility to ensure that communication is sent to the university from a McMaster account. If an instructor becomes aware that a communication has come from an alternate address, the instructor may not reply at his or her discretion.

Privacy Protection

In accordance with regulations set out by the Freedom of Information and Privacy Protection Act, the University will not allow return of graded materials by placing them in boxes in departmental offices or classrooms so that students may retrieve their papers themselves; tests and assignments must be returned directly to the student. Similarly, grades for assignments for courses may only be posted using the last 5 digits of the student number as the identifying data. The following possibilities exist for return of graded materials:

1. Direct return of materials to students in class.
2. Return of materials to students during office hours.
3. Students attach a stamped, self-addressed envelope with assignments for return by mail.
4. Submit/grade/return papers electronically.

Arrangements for the return of assignments from the options above will be finalized during the first class.

Course Modification

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check his/her McMaster email and course websites weekly during the term and to note any changes.

ADVISORY STATEMENTS

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. For information on the various types of academic dishonesty please refer to the [Academic Integrity Policy](https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/), located at <https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/>

The following illustrates only three forms of academic dishonesty:

- plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
- improper collaboration in group work.
- copying or using unauthorized aids in tests and examinations.

AUTHENTICITY / PLAGIARISM DETECTION

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. **All submitted work is subject to normal verification that standards of academic integrity have been upheld** (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, usernames for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

ONLINE PROCTORING

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the [Code of Student Rights & Responsibilities](#) (the “Code”). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online**. It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students’ access to these platforms.

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Students with disabilities who require academic accommodation must contact [Student Accessibility Services](#) (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University’s [Academic Accommodation of Students with Disabilities](#) policy.

REQUESTS FOR RELIEF FOR MISSED ACADEMIC TERM WORK

McMaster Student Absence Form (MSAF): In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “Requests for Relief for Missed Academic Term Work”: <https://academiccalendars.romcmaster.ca/content.php?catoid=44&navoid=9020#requests-for-relief-for-missed-academic-term-work>

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the [RISO](#) policy. Students should submit their request to their Faculty Office **normally within 10 working days** of the beginning of term in which they anticipate a need for accommodation or to the Registrar’s Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors. The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

EXTREME CIRCUMSTANCES

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.

