

HUMAN SKELETAL BIOLOGY

Winter 2023

Instructor: Brianne Morgan

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Office: CNH 502

Office Hours: Tuesday, 11:00 am-12:00 pm (in person), virtual by appointment

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Office Hours: TBA

Lecture: Tuesdays 9:30 – 10:20 am

Location: ABB 165

Labs*: L01- Wednesday 10:30 am-12:20 pm

L02-Wednesday 12:30-2:20 pm

*Only attend your scheduled lab.

Location: CNH 407

Lab Technician: Bonnie Kahlon

Office: CNH 407

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Course Description

This course is intended for students interested in the study of human skeletal remains in an archaeological context. The integrated lecture and laboratory format will give you extensive laboratory training in human skeletal biology and practical experience with the methods used in the identification and analysis of human skeletal remains. Students will learn how to identify and side individual bones of the human skeleton, and develop an understanding of general bone biology. Techniques for estimating skeletal age-at-death, sex, and stature will also be covered.

Course Objectives

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

- Identify the major bones of the human skeleton and distinguish features on specific bones
- Identify and inventory human skeletal remains
- Apply methods used to estimate age-at-death, sex, and stature on skeletal remains
- Discuss the information that can be derived from skeletal remains and the limitations of this evidence

Required Materials and Texts

- White, TD and Folkens, PA. (2005) The Human Bone Manual. Academic Press. This book can be purchased, new or used, from the Campus Store [using this link](#).
- Various articles, listed in the weekly course schedule. Readings will be posted to Avenue to Learn.
- Anatomy web resources may be helpful to you for studying. Examples include:
 - Sketchfab.com – Free, has 3D models of bones (some are better than others).
 - Eskeletons – Free app with 3D models of an adult male skeleton.
 - Anatomy 3D Atlas Skeleton – \$9.99 to purchase app with 3D models of skeleton, good quality.

Class Format

Lectures will be in-person, and will be recorded using Echo 360 and posted on Avenue to Learn. In-person labs will *not* be recorded (because there is no Echo360 capacity in the lab space). There are also open labs available for students to review material and to prepare for the practical exams. The schedule for open labs will be posted in CNH 407 and on A2L.

Course Evaluation – Overview

1. Quizzes (2) (5% each; 10% of final grade), on A2L week of February 6th and March 20th.
2. Practical exams (2) (15% each; 30% of final grade), in-person February 15th and March 29th
3. Midterm exam (25% of final grade), in-person February 28th
4. Final exam (25% of final grade), in-person during Final Exam Period
5. Biological profile report (10% of final grade), due April 19th

Course Evaluation – Details

1. Quizzes (2 x 5% = 10%); Quiz 1 posted week of February 6th; Quiz 2 posted week of March 20th

These quizzes are designed to track your progress as you learn the skeletal material and will be useful reviews for the practical exams. You will be asked to identify and side bones, as well as identify features and characteristics on bones. Quizzes will be administered on Avenue to Learn and will be available for 48 hours when released. Randomized questions will be drawn from a question bank, so each student will complete a unique quiz. Once the quiz is started, you will have a specified time limit to answer all the questions.

2. Practical Exams (2 x 15% = 30%); Practical Exam 1 – February 15th; Practical Exam 2 - March 29th

These practical exams exam will be held during scheduled lab times and will consist of a series of stations requiring identification of bones, siding bones, and identifying features on bones.

3. Midterm Written Exam (25%); February 28th

The midterm exam will be in class, and consist of diagrams, short-answer, and essay questions related to material from lectures, labs, and required readings. Questions will evaluate your understanding of material presented in lectures, and your ability to think critically about concepts you have learned in class.

4. Final Exam (25%); During Final Exam Period

The final exam will be in-person, and cover a range of topics, with an emphasis on material covered after the midterm exam. The format of the final exam will be similar to the midterm exam (diagrams, short-answer, and essay questions).

5. Biological Profile Report (10%); due April 19th

You will write a short report (750 words, not including tables) on one of the skeletons from the teaching collection. It should include age, sex, ancestry, and stature estimates, and describe the methods you used to evaluate your skeleton. The report should also include the limitations of your conclusions. This assignment will let you apply the various osteological techniques that you have learned during the class.

Weekly Course Schedule and Required Readings

Week 1 (January 9th)

Lab: NO LABS THIS WEEK

Lecture: Introduction to the class; introduction to the human skeleton/anatomical terms

Readings: White and Folkens (2005), Chapters 1 and 6

Week 2 (January 16th)

Lab (CNH 407): Introduction to the lab; thorax & shoulder (ribs, sternum, clavicle, scapula)

White and Folkens (2005), Chapters 10 and 11

Lecture: Bone biology, bone growth and development, joints

Readings: White and Folkens (2005), Chapter 4

**January 17th – last day for drop/add*

Week 3 (January 23th)

Lab: Vertebral column and pelvic girdle (innominates, sacrum, coccyx)

White and Folkens (2005), Chapters 9 and 14

Lecture: Bioarchaeology and excavating human remains

Readings: White and Folkens (2005), Chapter 2

Week 4 (January 30st)

Lab: Upper limb (humerus, radius, ulna)

White and Folkens (2005), Chapter 12

Lecture: Post-mortem skeletal modification

Readings: White and Folkens (2005), Chapter 5

Week 5 (February 6th)

Lab: Bones of the hand and feet

White and Folkens (2005), Chapter 13,16

Lecture: Paleopathology

Readings: White and Folkens (2005), Chapter 17

Grauer, A. L. (2018). A century of paleopathology. *American Journal of Physical Anthropology*, 165(4), 904-914.

Notes: Quiz #1 available on Avenue to Learn

Week 6 (February 13th)

Lab: Practical Exam #1 (15%)

Lecture: Ethics, review for written midterm exam

Readings: Meloche, C. H., Spake, L., & Nichols, K. L. (2020). Introduction: Working together to do better. In *Working with and for Ancestors* (pp. 1-17). Routledge.

Week 7 (February 20st)

NO CLASS OR LABS – Mid-term Recess

Week 8 (February 27th)

Lab: Lower limb (femur, tibia, fibula)

White and Folkens (2005), Chapter 7 (pp. 75-104)

Lecture: Written midterm exam (25%)

Week 9 (March 6th)

Lab: Cranium I – the cranial vault

White and Folkens (2005), Chapter 16

Lecture: Sex estimation (pelvis) and stature estimation

Readings: White and Folkens (2005), Chapter 19 (pp.387-400).

Week 10 (March 13th)

Lab: Cranium II – the facial skeletal

White and Folkens (2005), Chapter 7 (pp. 104-126)

Lecture: Sex and ancestry estimation (cranium)

Readings: White and Folkens (2005), Chapter 19 (pp. 385-387, 400-410)

Week 11 (March 20st)

Lab: Dentition

White and Folkens (2005), Chapter 8

Lecture: Age Estimation - adults

Readings: White and Folkens (2005), Chapter 19 (pp. 363-385)

Notes: Quiz #2 available on Avenue to Learn

Week 12 (March 27th)

Lab: Practical Exam #2 (15%)

Lecture: Age Estimation - subadults

Readings: White and Folkens (2005), Chapter 19 (pp. 363-385)

Week 13 (April 3th)

Lab: Age and sex estimation

Readings: White and Folkens (2005), Chapter 19 (pp. 363-398)

Lecture: Developing an osteobiography

Readings: Hosek, L., & Robb, J. (2019). Osteobiography: A platform for bioarchaeological research. *Bioarchaeology International*, 3(1), 1-22.

Week 14 (April 10th)

Lab: Free time for biological profile assignment

Lecture: Review for final exam

Course Policies

Submission of Assignments

Quizzes will be completed on Avenue to Learn. The Biological Profile assignment will also be submitted on Avenue to Learn. All other assessments will be in-person, pending COVID-19 restrictions.

Grades

Grades will be based on the McMaster University grading scale:

MARK	GRADE
90-100	A+
85-90	A
80-84	A-
77-79	B+
73-76	B
70-72	B-
67-69	C+
63-66	C
60-62	C-
57-59	D+
53-56	D
50-52	D-
0-49	F

Late Assignments

Late assignments will be penalized at 10% per day, unless an extension has been granted.

Absences, Missed Work, Illness

Attendance is essential if you want to do well in this course. The course relies on active participation and regular attendance of the labs and lectures. However, if you feel unwell, please stay home. In-person lectures will be recorded using Echo 360 and will be posted on Avenue to Learn. Labs will not be recorded. Missed labs cannot be made up, but there will be open labs available for students to review material and to prepare for the practical exams. The schedule for open labs will be posted in CNH 407 and on A2L. Students are responsible for arranging make-up quizzes/exams with the instructor. Missed work will not be re-weighted, so if you miss a quiz or exam you will need to arrange a make-up exam or quiz. 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" (MSAF). If you have used your MSAF, and still need relief from academic work, please contact the Faculty of Social Sciences Advising office (or your home Faculty advising office) to discuss alternatives.

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.