

HUMAN OSTEOLOGY
Anthropology 4310, Fall semester

Instructor: Gwendolyn Robbins
Classroom and office: 401 Sanford Hall
Office Hours: TBD, by appointment, or anytime my door is open

ANT 4310. Human Osteology/(3). Fall.

This course is designed to provide students with an in-depth knowledge of the human skeleton and dentition. This course will examine bones and teeth as dynamic elements that grow, develop, and degenerate throughout the lifespan. Topics covered include bone and tooth biology, microstructure, and gross anatomy including important features and landmarks of each element. Some time will also be devoted to practical issues of applying osteology to estimate age at death, sex, stature, and osteobiography. (Prerequisite: A grade of C+ or better in ANT 1230).

Specific Goals of the Course:

- (1) To understand anatomical terms, lab procedures, and standard osteological practice
- (2) To become thoroughly grounded in the anatomy and morphology of human skeletal and dental elements
- (3) To become comfortable with identifying skeletal and dental elements based on features and landmarks, even in cases of fragmentary, burned, or poorly preserved remains
- (4) To learn how skeletal and dental development proceeds throughout the lifespan
- (5) To understand how age at death and sex are estimated in human skeletal and dental material and to become familiar with established methods and standards
- (6) To understand bone and tooth microstructure- e.g. determining whether or not a bone is human, examining functional morphology, and establishing age at death

Required texts:

- White, T. (2000) *Human Osteology*. Academic Press.
- Baker, B., Dupras, T., Ducheri, M. (2005) *Osteology of Infants and Children*. Texas A and M University Press.

Recommended optional texts

- Burns, K.R. (2006) *Forensic Anthropology Training Manual*. Prentice Hall.
- Schwartz, J.H. (1995) *Skeleton Keys*. Oxford University Press.

Grading: Your grade will be based on quizzes and 2 exams

(1) LABORATORY EXERCISES: Each week we will be working on identifications in the lab. This time is designed to provide you with experience in osteology at a practical level. It is very difficult to learn osteology without hands-on experience. Therefore, it is important that students attend lab and lectures. You will have to spend time outside of class studying your text and you may also wish to come in and look at lab materials outside of class time. Open lab times will be available but will not substitute for attendance.

(2) QUIZZES: We will have a short quiz at the beginning of class (see schedule), which will consist of definition of terms, bone identifications, and short answer questions about concepts covered in class the previous week. There are 4 quizzes before the midterm and 5 after the midterm. Each quiz will be worth 10 points. Make-ups will not be provided unless you have a real emergency. (90 out of total 300 points)

(3) MIDTERM AND FINAL EXAMS: There will be two major exams during the term, one at mid-semester and one at the end of the term. The exams will require a class period to complete and will have a mixed format including multiple choice, short answer essay (1 paragraph), and practical identification from pictures and from bones. The exams are worth 105 points each (210 out of total 300 points).

Grading:

Quizzes (9 quizzes x 10 pts each = 90 pts)

Midterm (105 pts)

Final Exam (105 pts)

total of 300 points

I will use the following scale (any partial points will be rounded to the nearest whole number):

A	93 - 100%
A-	90 - 92%
B+	87 - 89%
B	83 - 86%
B-	80 - 82%
C	70 - 79%
D	60 - 69%
F	< 60%

Office Hours: I will have eight office hours and two hours of open lab time per week (Wed before class). Open lab time gives you additional hours to examine the bones and reference materials. If these regular hours are not compatible with your schedule, please make an appointment. I encourage students to meet with me. I feel that professor-student contact and communication are very important and allow for discussion

that the classroom does not permit because of time constraints. Please come see me to talk about any questions you might have about reading or lecture material, to discuss plans/questions you might have about becoming an anthropology major/graduate student, to discuss research credits, or to evaluate ideas you might have about your own research interests in biological anthropology.

Attendance Policy: In order to perform well in this course, it is critical that you attend class. Indeed, it has been demonstrated in numerous assessments that class attendance is the most influential factor in a student's academic performance. Classes should only be missed for reasons beyond your control such as illness, family emergencies, or participation in university-sanctioned activities or programs. It is not necessary to inform me of why you needed to miss class, but please endeavor to attend each class period. Please understand that if you do miss class, YOU are responsible for the missed material. It is also your responsibility to make sure that you come to me for any handouts or important announcements made during the missed class.

Cheating and Academic Honesty: I hope that this will not be an issue in this class. Cheating, plagiarism, or fabrication are acts of academic dishonesty and will absolutely not be tolerated. Members of the college community are expected to be honest and forthright in their academic endeavors. To falsify the results of one's research, to present the words, ideas, data or work of another as one's own, or to cheat on an examination corrupts the essential process of learning. Quite simply, anyone caught cheating or engaged in any form of academic dishonesty will fail the course.

Discrimination: I am committed to encouraging a caring and supportive atmosphere on campus and of promoting a campus climate that understands and respects the needs of a culturally, ethnically, physically, and socially diverse student body. The implication of my personal dedication to fostering diversity, is that there will be no discrimination in this class on the basis of any of the categories covered in the college's anti-discrimination policy. Please let me know as soon as possible if you feel that you have been treated unjustly; I will evaluate the situation and take appropriate action.

Physical or Learning Disabilities: Appalachian State University is committed to making reasonable accommodations for individuals with documented qualifying disabilities in accordance with the Americans with Disabilities Act of 1990, and Section 504 of the Rehabilitation Act of 1973. Those seeking accommodations based on a substantially limiting disability must contact and register with The Office of Disability Services (ODS) at www.ods.appstate.edu or 828-262-3056. Once registration is complete, individuals will meet with ODS staff to discuss eligibility and appropriate accommodations.

TENTATIVE COURSE OUTLINE AND SCHEDULE

Please note that there is *flexibility* (!) in this schedule and there may be changes.

Week 1 Aug 27

Read: White "Anatomical Terminology," "Analysis and Interpretation"; Baker pg 1-28

Course Introduction, syllabus, what is osteology, what can we learn from human remains, why the growth and development perspective

- Anatomical terms, names of bones and categorization schemes
- Come into open lab this week to learn orientation and terminology, cranial vs. postcranial bones, axial vs. appendicular skeleton, names of bones vs. features

Week 2 Sept 3 (no quiz this week)

lecture Bone Biology: embryology and development

lab **Lab**: microstructural analysis of juvenile and adult bones

reading White Chapter 2 "Bone Biology"

Week 3 Sept 10 (bone biology quiz)

lecture Dental Biology: embryology and development

lab **Lab**: microstructural analysis of juvenile and adult teeth

reading Copies available on office door

Hillson Ch 2; Smith and Avishai (2005) J Archaeol Sci vol. 32:83-89

Week 4 Sept 17 (dental development quiz)

lecture Is it human?

lab **Lab**: identifying bones of the adult skull

reading Readings provided by me (online)

Week 5 Sept 24 (no quiz)

lecture The skull

lab **Lab 4**: identifying bones of the subadult skull

reading White chapter 4; Baker 29-52

Week 6 Oct 1 (quiz on the skull)

lecture Dental formation, eruption, identification, and applications

lab **Lab 5**: learning to identify the dentition

reading White chapter 5; Baker chapter 5

Week 7 Oct 8 (tooth ID quiz)

lecture Age and sex estimation

lab **Lab 6**: cranium; **Lab 7**: dentition (2 shorter labs this week)

reading Scheuer Chapter 2; relevant pages marked in lab texts (for lab); Baker chapter 10 (for lab)

Week 8 Oct 15 Midterm Exam

Week 9 Oct 22 (no quiz this week)

Lecture The vertebral column: anatomy, variation, and applications

Lab **Lab 8:** Identifying vertebrae

Reading White chapter 6; Baker pgs 75-86

Week 10 Oct 29 (vertebrae quiz)

lecture The thorax and the pectoral girdle

lab **Lab 9:** ID of ribs & age estimation from the fourth rib

reading White chapter 7; Baker ch 7

Week 11 Nov 5 (thoracic region quiz)

lecture Long bones of the upper limb

lab **Lab 10:** ID, metrics, and sex

reading White chapter 9; Baker pgs 103-111

Week 12 Nov 12 (upper limb quiz)

lecture The hand and wrist

lab **Lab 11:** Identifying the carpals, metacarpals, and manual phalanges

reading White chapter 10; Baker pgs 124-137

Week 13 Nov 19 (hand and wrist quiz)

lecture The pelvic girdle

lab **Lab 12:** Identifying, aging and sexing the pelvis

reading White chapter 11; Baker pgs 83-92

Week 14 Nov 26 No class (Thanksgiving)

lecture The long bones of the lower limb (look it over online)

lab **Lab 13:** ID, stature, and sex in lower limb

reading White chapter 12; Baker pgs 112-123

Week 15 Dec 3 (Pelvis and Lower limb quiz)

lecture The feet and ankles

lab **Lab 14:** Identifying tarsals, metatarsals, and pedal phalanges

reading White chapter 13; Baker pgs 138-152

Week 16 Reading Day

Final Exam Wednesday, December 17 from 6 - 8:30 PM