

ANTH 414  
HUMAN OSTEOLOGY

Fall 2008

M/W/F 9-10:50 am

Alumni 404

Instructor: Kristina Killgrove

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Course Description: The discipline of anthropology has shown us that humans are naturally curious about themselves and the world around them. From prehistoric cave art to modern biochemistry, people have sought to describe human anatomy and physiology in a variety of ways. This course specifically covers human osteology, or the study of the human skeleton. The course will cover skeletal morphology in both lecture and laboratory settings. Students will learn: 1) how to identify skeletal elements, both whole and fragmentary; 2) how to estimate age, sex, ancestry, and stature of an individual; 3) laboratory analysis and imaging techniques; 4) how to reconstruct populations, particularly in terms of diet and disease; and 5) real world applications of human osteology.

Texts:

Required – *Human Bone Manual* or *Human Osteology* by T.D. White and P.A. Folkens

*Dental Morphology* by G.C. van Beek

Recommended – *Human Osteology: A Laboratory and Field Manual* by W.M. Bass

Requirements:



*Quizzes* (40%) – There will be eleven (11) quizzes throughout the course of the semester. Quizzes will always be given on Friday at the beginning of class (9am sharp). You will have 15-20 stations at which you will have to identify bone, side, and/or landmark. Quizzes are designed to take about 20 minutes, 1 minute for each station. There will be no make-ups for quizzes, but I will drop your lowest quiz grade. Each quiz will have an extra credit question.



*Lab Notebook* (10%) – Purchase a 3-ring notebook for this course. For every week that there is a Friday quiz, you will receive a lab assignment on Monday, for a total of eleven (11) labs. As with quizzes, you may drop one. However, the labs are designed to help you learn the material that will be on the quiz. You may work with a partner to complete the lab, but you will turn in assignments individually. Your notebook will be graded as listed in the syllabus.



*Midterm and Final* (30%) – The midterm and final will also consist primarily of identification and/or analysis of bones (side, landmarks, age, sex, pathology). The midterm is worth 15% of your grade. The final, which will also include some short-answer questions, will be worth 15% of your grade.



*Project* (20%) – Throughout the semester, you will be working on a full osteological analysis of a human skeleton. In a 7- to 10-page report, you will identify the bones present and report on the skeleton's age, sex, stature, and pathological conditions. More information will be given after the midterm.

### Attendance Policy:

In addition to the above, your attendance at lecture is mandatory, and you must be registered for lab. You are required to attend at least one hour of lab each week. You will find during the semester that you need more than one hour of lab in order to study or work on your projects. Lab will be open from 10 until 11am every Monday, Wednesday, and Friday. More than two unexcused absences from lecture will result in half a letter grade deduction from your final grade for each additional absence. Failure to come to lab at least one hour per week will also result in half a letter grade deduction from your final grade for each additional absence.

### Academic Dishonesty Policy:

Please review UNC's Honor Code if you are unfamiliar with the contents. Note especially Section B, which lists the following responsibilities of Carolina students regarding academic integrity.

#### **Section B. Academic Dishonesty.**

It shall be the responsibility of every student enrolled at the University of North Carolina to support the principles of academic integrity and to refrain from all forms of academic dishonesty, including but not limited to, the following:

1. Plagiarism in the form of deliberate or reckless representation of another's words, thoughts, or ideas as one's own without attribution in connection with submission of academic work, whether graded or otherwise.
2. Falsification, fabrication, or misrepresentation of data, other information, or citations in connection with an academic assignment, whether graded or otherwise.
3. Unauthorized assistance or unauthorized collaboration in connection with academic work, whether graded or otherwise.
4. Cheating on examinations or other academic assignments, whether graded or otherwise, including but not limited to the following: a. Using unauthorized materials and methods (notes, books, electronic information, telephonic or other forms of electronic communication, or other sources or methods); b. Violating or subverting requirements governing administration of examinations or other academic assignments; c. Compromising the security of examinations or academic assignments; d. Representing another's work as one's own; or e. Engaging in other actions that compromise the integrity of the grading or evaluation process.
5. Deliberately furnishing false information to members of the University community in connection with their efforts to prevent, investigate, or enforce University requirements regarding academic dishonesty.
6. Forging, falsifying, or misusing University documents, records, identification cards, computers, or other resources so as to violate requirements regarding academic dishonesty.
7. Violating other University policies that are designed to assure that academic work conforms to requirements relating to academic integrity.
8. Assisting or aiding another to engage in acts of academic dishonesty prohibited by Section II. B.

Course Outline:

<b>Date</b>	<b>Topic</b>	<b>Reading Due</b>	<b>Assignments Due</b>
<b>UNIT 1 Introduction to Osteology</b>			
8/20	What is Human Osteology? Course Guidelines	White Ch. 1	
8/22	Skeletal Terminology, Laboratory Rules	White Ch. 6	
8/25	Biology of the Human Skeleton	White Ch. 4	
<b>UNIT 2 The Human Skeleton</b>			
8/27	Calvarium, Skeleton Assignments	White Ch. 7 (pp. 75-104)	
8/29	Splanchnocranium	White Ch. 7 (pp. 104-126)	QUIZ 1, Skeleton Lab
9/1	<i>No Class – Labor Day</i>		
9/3	Dental Anatomy & Terminology	White Ch. 8 (pp. 127-134) van Beek Section 3, Glossary	
9/5	Adult Dentition – I/C	White Ch. 8 (Is and Cs) van Beek Section 2 (pp. 45-66)	QUIZ 2, Skull Lab
9/8	Adult Dentition – P/M	White Ch. 8 (Ps and Ms) van Beek Section 2 (pp. 67-96)	
9/10	Subadult Dentition – I/C/M	van Beek Section 1	
9/12	Cervical Vertebrae & Hyoid	White Ch. 9 (pp. 155-169)	QUIZ 3, Tooth Lab
9/15	Thoracic & Lumbar Vertebrae	White Ch. 9 (pp. 170-180)	
9/17	Sternum & Ribs	White Ch. 10	
9/19	Clavicle & Scapula	White Ch. 11	QUIZ 4, Vertebrae Lab
9/22	Arm	White Ch. 12	
9/24	Hand – Carpals	White Ch. 13 (pp. 225-233)	
9/26	Hand – Metacarpals & Phalanges	White Ch. 13 (pp. 233-240)	QUIZ 5, Arm/Hand Lab
9/29	Bipedalism		
10/1	Pelvis	White Ch. 14	
10/3	Leg	White Ch. 15	QUIZ 6, Pelvis Lab
10/6	Foot – Tarsals	White Ch. 16 (pp. 287-300)	
10/8	Foot – Metatarsals & Phalanges	White Ch. 16 (pp. 300-308)	
10/10	Animal and Subadult Bones		QUIZ 7, Leg/Foot Lab

10/13	Midterm Review		
10/15	MIDTERM		MIDTERM
10/17	<i>No Class – Fall Break</i>		

<b>UNIT 3</b>	<b>Identifying Individuals</b>		
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10/20	Sex	White Ch. 19 (pp. 385-398)	
10/22	Age – Adult	White Ch. 19 (pp. 365-385)	
10/24	Age – Subadult	White Ch. 19 (pp. 364-6; 372-4)	QUIZ 8, Sex/Age Lab
10/27	Stature	White Ch. 19 (pp. 398-400) Bass Ch. 1 (pp. 21-28)	
10/29	Ancestry	White Ch. 19 (pp. 400-404) Byers Ch. 7 AAPA Statement on Race	
10/31	Photography	White Ch. 18 (pp. 348-353)	QUIZ 9, Stature/Ancestry Lab
11/3	Nonmetric Variation	White Ch. 19 (pp. 406-411)	
11/5	Pathology – Trauma	White Ch. 17 (pp. 309-317)	
11/7	Pathology – Arthritis	White Ch. 17 (pp. 325-328)	QUIZ 10, Photography Lab
11/10	Pathology – Nonspecific	White Ch. 17 (pp. 317-322)	
11/12	Pathology – Nutritional	White Ch. 17 (pp. 323-324)	
11/14	Pathology – Teeth	White Ch. 17 (pp. 328-332)	QUIZ 11, Pathology Lab
11/17	Taphonomy	White Ch. 5	
11/19	Ethics	White Ch. 3, NAGPRA	
11/21	Bioarchaeology	White Ch. 19 (pp. 410-418)	
11/24	Forensic Anthropology	Byers Ch. 3	
11/26-28	<i>No Class – Thanksgiving</i>		

<b>UNIT 4</b>	<b>Lab Projects</b>		
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12/1	Projects, Exam Review		
12/3	Projects, Exam Review		
12/5	FINAL EXAM		FINAL EXAM
12/8	Skeletal Identification Project Due		ID PROJECT

## Bibliography

### Additional Required Readings: (online and on reserve in 404)

- American Association of Physical Anthropologists 1996. "AAPA statement on biological aspects of race." *American Journal of Physical Anthropology* 101:569-70.
- Bass, WM. 2005. "Stature estimation." *Human Osteology: a Laboratory and Field Manual*, Chapter 1, pp. 21-30. Missouri Archaeological Society.
- Byers, SN. 2008. "Establishing the forensic context." *Introduction to Forensic Anthropology, 3<sup>rd</sup> Ed.*, Chapter 3, pp. 60-85. Pearson.
- Byers, SN. 2008. "Attribution of ancestry." *Introduction to Forensic Anthropology, 3<sup>rd</sup> Ed.*, Chapter 7, pp. 152-175. Pearson.
- Native American Graves Protection and Repatriation Act (NAGPRA) 1990.

### Books on Reserve at the UL: (for projects and further information)

- Aufderheide, AC and C Rodríguez-Martín. 1998. *The Cambridge Encyclopedia of Human Paleopathology*. Cambridge University Press.
- Baker, BJ, TL Dupras, and MW Tocheri. 2005. *The Osteology of Children and Infants*. Texas A&M University Press.
- Bass, WM. 2005. *Human Osteology: a Laboratory and Field Manual*. Missouri Archaeological Society.
- Byers, SN. 2008. *Introduction to Forensic Anthropology, 3<sup>rd</sup> Ed.* Pearson.
- Cox, M and S Mays. 2000. *Human Osteology in Archaeology and Forensic Science*. Greenwich Medical Media, Ltd.
- Grauer, AL and P Stuart-Macadam. 1998. *Sex and Gender in Paleopathological Perspective*. Cambridge University Press.
- İşcan, MY and KAR Kennedy. 1989. *Reconstruction of Life from the Skeleton*. Wiley-Liss.
- Katzenberg, MA and SR Saunders. 2000. *Biological Anthropology of the Human Skeleton*. Wiley.
- Larsen, CS. 1997. *Bioarchaeology: Interpreting Behavior from the Human Skeleton*. Cambridge University Press.
- Mays, S. 1998. *The Archaeology of Human Bones*. Routledge.
- Parker Pearson, M. 1999. *The Archaeology of Death and Burial*. Texas A&M University Press.
- Reichs, K, ed. 1986. *Forensic Osteology: Advances in the Identification of Human Remains*. Thomas.
- Ubelaker, DH. 1989. *Human Skeletal Remains: Excavation, Analysis, Interpretation*. Taraxacum.
- van Beek, GC. 1983. *Dental Morphology: An Illustrated Guide*. Wright.
- White, TD and PA Folkens. 2000. *Human Osteology, 2<sup>nd</sup> Edition*. Academic Press.
- White, TD and PA Folkens. 2005. *The Human Bone Manual*. Academic Press.