AANT 311

HUMAN OSTEOLOGY

Fall 2011

Instructor:	Dr. Robert McCarthy	Time:	TR 10:15 – 11:30 am
Office:	AS 107	Place:	AS 11
Phone:	(518)442-4715	Format:	Lecture + lab
E-mail:	rmccarthy2@albany.edu		
Office hours:	T8-10, Th12-2, F12-2		

Course objectives:

This course will introduce students to the fundamental principles of bioarchaeology, which is the scientific study of human skeletal remains from archaeological sites. This course will be run as a lecture with a hands-on lab component, and students will have the opportunity to examine human skeletal remains immediately. It is imperative that you read the required materials prior to each class, as you will be expected to implement what you've read in class.

After participation in Human Osteology, the student will be able to:

(1) Identify individual bones in the human skeleton, including associated morphological features and the anatomical orientation of each bone.
(2) Demonstrate care and appropriate handling of human skeletal remains.
(3) Discuss the application of human osteology in archaeological and forensic settings.
(4) Discuss relevant techniques used to reconstruct identity from human skeletal remains.
(5) Discuss the role of human variation and individuality when studying human skeletal remains.

Grading:

Your grade in this course will be based on your scores on ten quizzes (cumulatively, 80%) and a final paper (20%). Nine out of the ten quizzes will count toward the final grade, and NO MAKEUPS will be allowed.

Pre-class preparation:

Students are expected to prepare for each class by reading assigned material and being prepared to contribute to discussion about the readings. In addition, Powerpoints for each class will be posted on Monday (for Tuesday lecture) and Wednesday (for Thursday lecture). Students are expected to download and print these Powerpoints, or to bring their computers to class so they can view the slides and take notes.

Tips for success:

(1) Although this is not a lab course *per se*, this is an intensive hands-on course in which we will be learning how to analyze human remains. Students are advised to learn actively.
(2) Look at the assigned readings before class.
(3) Visit the course Blackboard page regularly for tips, news, and updates.
(4) Make use of other resources in addition to those presented in class (i.e., www.eskeletons.org, www.physanth.org)
(5) Don't be afraid to ask me for help, to ask questions in class, to stop by my office hours, or to e-mail me with any questions or concerns.

Textbooks and readings:

White, T.D., Folkens, P.A. (2005). *The Human Bone Manual.* Elsevier Academic Press, London.

In addition to reading the textbook, students will be expected to read a few supplemental articles and handouts posted on Blackboard. Please be sure to check Blackboard regularly, as there will be new announcements, articles, handouts, and grades posted each week.

Selected readings:

(1) Lieberman, D.E. (1997). Making behavioral and phylogenetic inferences from fossils: considering the developmental influence of mechanical forces. *Ann. Rev. Anthropol.* 26, 185-210.
(2) Pearson, O.M., Lieberman, D.E. (2004). The aging of Wolff's "Law": ontogeny and responses to mechanical loading in cortical bone. *Yrbk. Phys. Anthropol.* 47, 63-99.
(3) Byers, S.M. (2011). *Introduction to Forensic Anthropology, 4th ed.* Pearson. Chapters 12 (projectile trauma), 13 (blunt force trauma), 14 (sharp force trauma).
(4) Wroe, S. et al. (2007). High-resolution three-dimensional computer simulation of hominid cranial mechanics. *Anat. Rec.* 290, 1248-1255.
(5) Strait, D.S. et al. (2007). Biomechanics and its relevance to early hominid phylogeny: an examination of palatal thickness using finite-element analysis. J. Hum. Evol. 52, 585-599.
(6) Spencer, M.A., Demes, A.B. (1993). Biomechanical analysis of masticatory system configuration in Neandertals and Inuit. Am. J. Phys. Anthropol. 91, 1–20.
(7) *IFDEA Erosion – Tooth wear Educational Teaching Resource*.
(8) Liversidge, H.M., Smith, B.H., Maber, M. (2010). Bias and accuracy of age estimation using developing teeth in 946 children. *Am. J. Phys. Anthropol.* 143, 545-554.
(9) AlQahtani, S.J., Hector, M.P., Liversidge, H.M. (2010). Brief communication: the London atlas of tooth development and eruption. *Am. J. Phys. Anthropol.* 142, 481-490.
(10) Cohen, J. (1994). The earth is round ($p<0.05$). *American Psychol.* 49, 997-1003.
(11) Shingleton, A. (2010) Allometry: the study of biological scaling. *Nature Education Knowledge* 1:2.
(12) Corruccini, R.S. (1975). Multivariate analysis in biological anthropology: some considerations. *J. Hum. Evol.* 4, 1-19.
(13) McCarthy, R. (2011). Handout – multivariate morphometric procedures.
(14) Ruff, C. (2002). Variation in human body size and shape. *Ann. Rev. Anthropol.* 31, 211-232.

Expectations:
Students will be expected to contribute positively to the general learning atmosphere in class; therefore, disruptions of lectures and discussions will result in appropriate disciplinary action. PLEASE TURN OFF YOUR CELL PHONES PRIOR TO CLASS.

Note: This syllabus is subject to change at any time. Updates may be posted on Blackboard.

CLASS SCHEDULE

Day	Date	Lecture	Reading	Activity / Deadline
T	8/30	Intro / Let's see what you know	WF ch. 1-3	**IN-CLASS QUIZ**
R	9/1	Anatomical terminology	WF ch. 6	
T	9/6	Skull	WF ch. 7	**QUIZ #1 (9/1)**
R	9/8	Dentition	WF ch. 8	
T	9/13	Hyoid and vertebrae	WF ch. 9	
R	9/15	Thorax, shoulder girdle	WF ch. 10, 11	**QUIZ #2 (9/6-13)**
T	9/20	Arm and hand	WF ch. 12, 13	
R	9/22	Pelvis	WF ch. 14	
T	9/27	Leg and foot	WF ch. 15, 16	**QUIZ #3 (9/15-22)**
R	9/29	NO CLASS	-	
T	10/4	Bone biology	WF ch. 4, SR	**PROPOSE TOPIC**
R	10/6	Skeletal adaptations to loading	SR(1,2)	**QUIZ #4 (9/27-10/4)**
T	10/11	Pathology overview	WF ch. 17	
R	10/13	Stress and pathology	WF320-332	
T	10/18	Infectious pathogens	WF317-320	**QUIZ #5 (10/6-13)**
R	10/20	Trauma I: fracture, sharp force, bone modification	WF312-316, ch. 5, SR(3)	
T	10/25	Trauma II: blunt force, projectile	SR(3)	**10 ANNOTATED REFS**
R	10/27	Craniofacial biomechanics	SR(4)	**QUIZ #6 (10/18-25)**
T	11/1	Craniofacial adaptations	SR(5,6)	
R	11/3	More craniofacial adaptations	SR(6)	
T	11/8	Dental changes	SR(7,8,9)	**QUIZ #7 (10/27-11/3)**
R	11/10	Biostatistics 1	SR(10)	
T	11/15	Biostatistics 2	SR(11,12)	**INTRODUCTION**
R	11/17	Ancestry and biodistance	WF 400-404; SR(13)	**QUIZ #8 (11/8-15)**
T	11/22	Age estimation	WF 363-384	
R	11/24	NO CLASS - THANKSGIVING	-	
T	11/29	Sex estimation	WF 385-397	**QUIZ #9 (11/17-24)**
R	12/1	Stature estimation	WF 398-399; SR(14)	
T	12/6	Creating a skeletal profile		**QUIZ #10 (11/29-12/1)**
	12/10			**FINAL PAPER DUE**

Updated on 8/30/2011