

9-2013

## ANTY 412.01: Osteology

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# ANTHROPOLOGY 412 OSTEOLOGY FALL 2013

## SYLLABUS AND COURSE SCHEDULE

### MEETING TIMES AND PLACE

Lecture: MWF 10:10 – 11:00 am, 250 SS (RRS Physical Anthropology Lab)

Lab: Times TBA, 250 SS (RRS Physical Anthropology Lab)

### PROFESSOR

**Dr. Ashley McKeown**

Office: 225 Social Sciences Bldg

Office Hours: MWF 11 am – 12 pm and by appointment

Contact: ashley.mckeown@umontana.edu

### TEACHING ASSISTANTS

Rosie Bongiovanni, Kirsten Green, Kathleen Hauther, Justin Urbantas

### GOALS AND PURPOSE

This course involves the detailed examination of the elements of the human skeleton with an emphasis on identifying individual bones and their structures. The application of such knowledge will be specifically extended to fragmentary skeletal elements. The goal of learning such information is for application to specific scientific questions regarding the individuals or populations represented by the skeletal material under investigation. Therefore, the student will also be familiarized with the basic methods of skeletal analysis during application in the classroom and lab setting.

### Upon successful completion of this course, you will be

- able to identify and side (left, right, midline) the individual elements of the human skeleton
- able to identify the anatomical structures of individual elements
- able to identify fragmentary bones
- familiar with the basic methods of skeletal analysis

### COURSE STRUCTURE (OR WHAT TO EXPECT FROM THIS CLASS)

This class is an *intensive and detailed bone identification course* with an introduction to basic methods of skeletal analysis. Skeletal material from archaeological and forensic contexts is often fragmentary making it is necessary to identify elements based on anatomical minutiae. Classroom lecture is designed to cover the individual bones and their landmarks, while lab time allows you to practice what you have learned. This course also has a required lab component and you are expected to spend at least two (2) hours in lab each week. This will benefit you immensely *as you cannot learn this material from a book or lecture alone - there is no substitute for direct interaction with the skeletal material*. I cannot stress how spending adequate time in the lab is critical to your success in this class - not only do you need to learn all the bones, their landmarks, and how to identify side, but you need to develop an appreciation for the wide range of individual variation in the human skeleton. In an effort to meet this need, at least four (4) lab periods are offered per week. A finalized lab schedule will be available on 8/28.

### COURSE INFORMATION AND REQUIREMENTS

#### Required Texts:

White, Tim D, Black, Michael T., and Folkens, Pieter Arend, 2012. *Human Osteology*, 3<sup>rd</sup> Edition. San Diego: Academic Press. (**W** on schedule)

Bass, William M. 2005. *Human Osteology: A Lecture and Field Manual*, 5<sup>th</sup> edition. Columbia, MO: Missouri Archaeological Society. (**B** on schedule)

**Recommended Text:**

Stone, Robert J. and Stone, Judith A. 2006. *Atlas of Skeletal Muscles*, 5<sup>th</sup> edition. McGraw Hill. (SS on schedule)

**Grading**

Grades will be based on points earned on five (5) quizzes, a comprehensive final exam, three (3) mini-projects and lab attendance (total of 500 points). A summary of the grading structure is provided below (Quizzes 1-4 have 25 stations, Quiz 5 has 33 stations).

Quiz/Final	Points	Date	Description
Quiz 1	25	Friday, Sept 13	Bones only (2 questions per station)
Quiz 2	50	Friday, Oct 4	Bones only, cumulative (2 questions per station)
Quiz 3	50	Friday, Oct 25	Bones only, cumulative (3 questions per station )
Quiz 4	75	Friday, Nov 15	Bones only, cumulative (3 questions per station)
Quiz 5	100	Friday, Dec 6	Bones only, cumulative (3 questions per station)
Final Exam	75	Fri, 12/13, 8:00-10:00 am	Written questions, cumulative
Mini-projects	75		Three (3) mini-projects, each worth 25 points
Lab attendance	50	Weekly	

**Quizzes - 60%** -The quizzes will focus on bone, side, and feature/morphology identifications. Each quiz will have stations (boxes/trays) with 2 or 3 questions per station (see above for details). The quizzes will last 50 minutes and we will have two quiz sessions: first at 10:10 and a second at 11:00.

**Final Exam - 15%** - Comprehensive written exam will be administered during the regular finals period, Friday, Dec 13, 8:00-10:00 am.

**Mini-projects - 15%** - There will be three mini-projects during the course of the semester. These projects involve application of techniques for skeletal analysis.

**Lab Attendance - 10%** - You will need to attend lab for *at least 2 hours each week* and this will be documented by an attendance log. To earn 50 points, you will need to meet the lab attendance requirement for 12 weeks. To earn 45 points, you will need to meet the lab attendance requirement for 11 weeks. To earn 40 points, you will need to meet the lab attendance requirement for 10 weeks. To earn 35 points, you will need to meet the lab attendance requirement for 9 weeks. To earn 30 points, you will need to meet the lab attendance requirement for 8 weeks. If you do not meet the lab attendance requirement for at least 8 weeks of the semester, you will not receive any of the lab attendance points.

**Extra Credit Opportunities** - There will be several extra credit opportunities throughout the semester.

**Your final grade** will be determined using this scale: A = 100-92%, A- = 91-90%, B+ = 89-87%, B = 86-82%, B- = 81-80%, C+ = 79-77%, C = 76-72%, C- = 71-70%, D = 69-60%, F = <59%.

## COURSE SCHEDULE

\*The White text is abbreviated as **W**; Bass is abbreviated as **B**; and Stone and Stone is abbreviated as **SS**.

	<u>Topic</u>	<u>Readings*</u>
<b>Week 1 (Aug 26 – 30)</b>		
M-Lecture 1	Introduction to course and Phys Anth Lab	<b>W</b> Ch 1; <b>B</b> Ch 1, App 2
W-Lecture 2	Anatomical terms & bone biology	<b>W</b> Ch 2, 3; <b>B</b> Ch 1, App 1 <b>SS</b> Ch 2
F-Lecture 3	Introduction to the skull Frontal	<b>W</b> Ch 4:43-59; <b>B</b> Ch 2:31-36 <b>W</b> Ch 4:60-63; <b>B</b> Ch 2:36-37
<b>Week 2 (Sept 2 – 6)</b>		
	<b>No class Monday, Sept 2 (Labor Day)</b>	
W-Lecture 4	Parietals, Occipital	<b>W</b> Ch 4:64-66, 71-75; <b>B</b> Ch 2:37-42 <b>SS</b> 53
F-Lecture 5	Temporals	<b>W</b> Ch 4: 67-71; <b>B</b> Ch 2:42-44 <b>SS</b> 58, 60, 75-76, 78, 80, 113
<b>Week 3 (Sept 9 – 13)</b>		
M-Lecture 6	Sphenoid	<b>W</b> Ch 4:87-91; <b>B</b> Ch 2: 44-45 <b>SS</b> 55-56
W-Lecture 7	Catch-up & Open Lab	
	<b>Quiz 1 - Friday, Sept 13</b>	
<b>Week 4 (Sept 16 – 20)</b>		
M-Lecture 8	Maxillae, nasals	<b>W</b> Ch 4:75-77, 84-85; <b>B</b> Ch 2: 45-50
W-Lecture 9	Zygomatics, mandible	<b>W</b> Ch 4: 85-86, 91-95 <b>B</b> Ch 2:50-54; <b>SS</b> 54, 60, 62-63
F-Lecture 10	Goals of skeletal analysis	<b>W</b> Chs 17, 18, 21
<b>Week 5 (Sept 23 – 27)</b>		
M-Lecture 11	Ethmoid, lacrimals, palatines, vomer inferior nasal concha, auditory ossicles	<b>W</b> Ch 4:82-84,78-81, 71 <b>B</b> Ch 2:54-60
W-Lecture 12	Dentition I	<b>W</b> Ch 2: 14-15, Ch 5, App 2; <b>B</b> Ch 4 (incisors & canines)
F-Lecture 13	Dentition II	<b>W</b> Ch 5, App 2; <b>B</b> Ch 4 (premolars)

	<u>Topic</u>	<u>Readings*</u>
<b>Week 6 (Sept 30-Oct 4)</b> M- Lecture 14	Dentition III	<b>W</b> Ch 5, App 2; <b>B</b> Ch 4 (molars)
W-Lecture 15	Sex and ancestry estimation from the skull Cranometrics/ sex & ancestry estimation	<b>W</b> Ch 18: 408-415, 421-424, <b>B</b> Ch 2:81-88 <b>W</b> Ch 4: 54-59, 96-97, Ch 6: 339-341; <b>B</b> Ch 2:61-81, 88-92; Moodle Readings
<b>Quiz 2 - Friday, Oct 4</b>		
<b>Week 7 (Oct 7 – 11)</b> M-Lecture 16	Hyoid, intro to vertebrae, cervical verts	<b>W</b> Ch 6:129-139; <b>B</b> Ch 2: 60-61, Ch 3:93-101
W-Lecture 17	Thoracic and lumbar verts	<b>W</b> Ch 6:139-147; <b>B</b> Ch3:101-105
F-Lecture 18	Sacrum & coccyx	<b>W</b> Ch 11: 219-226; <b>B</b> Ch 3: 105-109 <b>SS</b> 167, 172-175
<b>Week 8 (Oct 14 – 18)</b> M-Lecture 19	Stemum & ribs	<b>W</b> Ch 7; <b>B</b> Ch3:110-113, 132-144
W-Lecture 20	Clavicle & scapula	<b>W</b> Ch 8; <b>B</b> Ch 3:115-131 <b>SS</b> 58, 106, 108, 113
F-Lecture 21	Humerus	<b>W</b> Ch 9:175-184; <b>B</b> Ch 3:145-159 <b>SS</b> 106, 110, 111, 114, 119, 124
<b>Week 9 (Oct 21 – 25)</b> M-Lecture 22	Radius & ulna	<b>W</b> Ch 9:184-198; <b>B</b> Ch 3:160-175 <b>SS</b> 110, 130, 135-140
W-Lab	Catch-up & Open Lab	
<b>Quiz 3 - Friday, Oct 25</b>		
<b>Week 10 (Oct 28 – Nov 1)</b> M-Lecture 23	The Hand & Carpals 1	<b>W</b> Ch 10:199-208; <b>B</b> Ch 3:175-183
W-Lecture 24	Carpals 2	<b>W</b> Ch 10:199-208; <b>B</b> Ch 3:175-183
F-Lecture 25	Metacarpals & phalanges	<b>W</b> Ch 10:209-218; <b>B</b> Ch 3:183-192

	<u>Topic</u>	<u>Readings*</u>
<b>Week 11 (Nov 4 – 8)</b> M-Lecture 26	Os coxa	<b>W</b> Ch 11: 226-240; <b>B</b> Ch 3: 192-218 <b>SS</b> 167, 172-175
W-Lecture 27	Femur & patella	<b>W</b> Ch 12: 241-254; <b>B</b> Ch 3:218-240 <b>SS</b> 164-165, 170-175, 178-181, 189-192
F-Lecture 28	Tibia & fibula	<b>W</b> Ch 12: 254-270; <b>B</b> Ch 3:241-258 <b>SS</b> 178-181, 200
<b>Week 12 (Nov 11 – 15)</b> <b>No Classes, Monday Nov 11 (Veterans Day Holiday)</b>		
W-Lab	Open Lab	
<b>Quiz 4 – Friday, Nov 15</b>		
<b>Week 13 (Nov 18 - 22)</b>		
M-Lecture 29	PC age & sex estimation	<b>W</b> Ch 18:381-408, 415-419; <b>B</b> see individual bone
W-Lecture 30	Tarsals	<b>W</b> Ch 13:271-284; <b>B</b> Ch 3:258-266
F-Lecture 31	Metatarsals & phalanges	<b>W</b> Ch 13:285-294; <b>B</b> Ch 3:266-270
<b>Week 14 (Nov 25 – 29)</b>		
M-Lecture 32	Postcranial osteometrics & Stature estimation	<b>B</b> see individual bone, Moodle Readings <b>W</b> Ch 18: 418-421; <b>B</b> see femur, tibia, etc
<b>No Classes, Wed, Nov 21 and Fri, Nov 23 (Thanksgiving Holidays)</b>		
<b>Week 15 (Dec 3 – 7)</b>		
M-Lecture 33	Pathological conditions	W Ch 19
W-Lab	Open Lab	
<b>Quiz 5 – Fri, Dec 6</b>		
<b>Week 16 – Finals Week (Dec 9 - 13)</b> <b>Comprehensive Final Exam – Friday, Dec 13, 8:00 – 10:00 am</b>		