

SYLLABUS

ANT 366 – Anatomy And Biology Of The Human Skeleton (a.k.a. Human Osteology)

Spring Semester 2014

PROFESSOR: Dr. Chris Kirk
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Office hours: Thurs. 1:00 - 2:00 PM

CLASSES: Tues. and Thurs. 10:00 AM - 12:30 PM
SAC 5.172

PREREQUISITES: ANT 301 and upper-division standing, or permission of the instructor

COURSE DESCRIPTION:

ANT 366 provides an *intensive* lab-based introduction to the anatomy and biology of the human skeleton. Weekly lectures will comprise a small proportion of the course, but the majority of each class day will be spent directly interacting with skeletal remains. Topics that will be covered include, but are not limited to, basic skeletal anatomy, identification of fragmentary remains, bone biology and development, skeletal pathology and remodeling, and the use of osteological remains to reconstruct individual characteristics (e.g., sex, age, etc.). The subject material covered in this course is directed toward upper division undergraduates in Anthropology, and is intended to provide a foundation for students interested in pursuing graduate study and/or careers in biological anthropology, archaeology, medicine, and forensic science. Please note, however, that ANT 366 is foremost an *anatomy* course, not a course in forensic science, bioarchaeology, or paleopathology.

This course requires extensive preparation both in and out of the lab. Students must be prepared to handle human osteological specimens with care, and to have a professional approach to working with human remains. Because this lab-intensive course covers a large amount of material and lab time is limited to 5 hours each week, **attendance is mandatory**. Mastery of course material will be assessed with regular **quizzes**. Quizzes may include both practical (e.g., bone identification, bone siding, etc.) and written components, and may cover information and materials from *any* prior class.

Lab exercises in weeks 1-8 will be primarily devoted to learning the basics of human skeletal anatomy. Following long-established tradition, we will dive in feet first and begin with the most complex structure: the skull. We then proceed by anatomical region to cover the axial skeleton, upper limb, and lower limb. After Spring Break (March 16-20), this basic knowledge of skeletal anatomy will be applied and expanded through a series of three projects in weeks 10-16. Project 1 explores the other half of the musculoskeletal system with an analysis of muscle attachment sites and the actions produced at mobile joints by various muscle groups. Project 2 focuses on comparative mammalian skeletal anatomy and the fundamental similarities shared by

all mammalian skeletons. Project 3 provides students with an opportunity to hone their skills in skeletal identification and analysis with a series of applied case studies.

TEXTBOOKS AND READING ASSIGNMENTS:

Required: *Human Osteology*, 3rd ed. 2012. White, Black, & Folkens. Academic Press
Additional supplemental readings will be posted on Canvas.

Other required materials: Sketchbook and Pencils

GRADING:

Quizzes -----	50%
Sketchbook -----	5%
Joints and Muscle Actions Project & Presentation -----	10%
Comparative Project & Presentation -----	10%
Human Case Studies -----	25%

Please note that:

- (1) The lowest quiz grade will be dropped.
- (2) After one unexcused absence, one point will be subtracted from your final grade for each additional unexcused absence.

Final Grade Ranges:

A = 100-90; **B** = 89-80; **C** = 79-70; **D** = 69-60; **F** = 59 and below

THERE IS NO FINAL EXAM FOR THIS COURSE.

CLASS RULES & POLICIES:

1. Use great care in handling skeletal remains – *most lab materials cannot be replaced.*
2. Skeletal material may *never* be taken out of the classroom (SAC 5.172).
3. Students engaging in flippant, frivolous, or imprudent behavior that could damage skeletal specimens (e.g., juggling or throwing specimens) will be asked to immediately leave the classroom and will be given an unexcused absence for the day. *Any student who damages a skeletal specimen due to such behavior, or who removes a specimen from SAC 5.172, will have their final grade reduced by a full letter.*
4. Any student suspected of stealing skeletal remains will be referred to both UT Police and Student Judicial Services.
5. Any student who observes unsafe handling of, or who observes / suspects theft of skeletal specimens, is encouraged to speak confidentially to Dr. Kirk.

6. Accidental damage to skeletal specimens can be minimized by careful observance of safe handling policies (see Protocols for Safe Handling and Care of Osteological Specimens). However, some accidental damage to the materials used in this class is inevitable. In the event that you damage a specimen or become aware of damage, please inform Dr. Kirk as soon as possible.
7. Please do not eat or drink in the classroom while handling skeletal remains.
8. Visitors to the classroom are not allowed without Dr. Kirk's specific prior consent.
9. Please treat human skeletal remains with the appropriate level of respect. Photography of human skeletal remains for purposes unrelated to class assignments (e.g., for posting on social media, etc.) is not permitted.
10. Plan to arrive in class prepared and on time. Please bring your textbook (*Human Osteology*) and sketchbook to class with you every day.
11. Readings and sketches for each week should be completed prior to class on Tuesday.
12. Attendance will be taken at the beginning of class. Students arriving after 10:10 AM will be marked as absent for the day. Students leaving class before 11:15 AM will also be marked as absent for the day. If you need to arrive late or leave early on a given day due to a non-recurring commitment, you must inform Dr. Kirk at least 24 hours in advance.
13. All students will have 1 free unexcused absence per semester. After that, one point will be subtracted from your final grade for each unexcused absence. Reasons for excused absences include (but are not limited to) illness or family emergencies.
14. Sketchbooks will be checked periodically to ensure that students are keeping up with this assignment outside of class. Points will be deducted for failure to complete sketches by the required date(s).

CHEATING POLICY:

During quizzes, students will not be permitted to use electronic devices of any kind. Please note that cheating includes (but is not limited to) both plagiarism and unauthorized collaboration on projects. Without exception, any student found cheating on a quiz or an assignment will receive a grade of zero for that quiz or assignment and will be referred to the dean's office for further disciplinary action.

NOTE ON SPECIAL ACCOMMODATIONS:

If you have an accommodation letter from the UT Services for Students with Disabilities (SSD) office, please schedule a meeting with Dr. Kirk as soon as possible. **Please note** that a number of common accommodation requests (e.g., extra time for exams and

quizzes, special consideration for frequent absences) cannot be met in this class. For example, speed is a factor being evaluated on quizzes so students cannot have extra time to complete quizzes. Similarly, given the hands-on nature of this lab-intensive course, there is no way to accommodate frequent absences because learning the course material is absolutely dependent on regular attendance. In short, if you cannot attend class, you cannot learn the course material with sufficient detail to succeed in ANT 366.

COURSE OUTLINE

Week 1

Readings: White et al., Chs. 2-4

20 Jan (Tu) Anatomical Terms & Introduction to Skull
22 Jan (Th) Skull (continued)

Week 2

Readings: White et al., Chs. 4-5
Supplemental Reading on Dental Variation: Hillson, 1996

27 Jan (Tu) **Quiz 1;** Skull & Introduction to Dentition
29 Jan (Th) Skull & Dentition (continued)

Week 3

Readings: White et al., Chs. 6-7
Supplemental Readings on Bone Biology: Swartz, 1993; Bonewald, 2008; Robey and Boskey, 2008; Ross, 2008

3 Feb (Tu) **Quiz 2;** Introduction to Vertebral Column & Thorax
5 Feb (Th) Vertebral Column & Thorax (continued)

Week 4

Readings: White et al., Chs. 8-9
Supplemental Reading on Dental Microstructure: Smith and Tafforeau, 2008

10 Feb (Tu) **Quiz 3;** Introduction to Shoulder Girdle & Arm
12 Feb (Th) Shoulder Girdle & Arm (continued)

Week 5

Readings: White et al., Ch. 10
Supplemental Reading on Siding Manual Phalanges: Christensen, 2005

17 Feb (Tu) **Quiz 4;** Introduction to Hand
19 Feb (Th) Hand (continued)

Week 6

Readings: White et al., Chs. 11, 18

Supplemental Readings on Age Determination: Cox, 2000; AlQahtani et al., 2010

24 Feb (Tu) **Quiz 5;** Introduction to Pelvis

26 Feb (Th) Pelvis (continued)

Week 7

Readings: White et al., Chs. 12, 18;

Supplemental Readings on Sex Determination: Bruzek, 2002; Cox, 2000; Ubelaker and Volk, 2002

3 Mar (Tu) **Quiz 6;** Introduction to Leg

5 Mar (Th) Leg (continued)

Week 8

Readings: White et al., Chs. 13, 18

Supplemental Reading on Estimating Stature: Auerbach and Ruff, 2004

10 Mar (Tu) **Quiz 7;** Introduction to Foot

12 Mar (Th) **Sketchbook due;** Foot (continued)

Week 9

16-20 Mar **Spring Break**

Week 10

Readings: White et al., Ch. 14

Supplemental Readings on Enteses: Cardoso and Henderson, 2010; Milella et al., 2012; Schrader, 2012; Schrader, 2015

24 Mar (Tu) **Quiz 8;** Begin joints and muscle actions project

26 Mar (Th) Joints and muscle actions project

Week 11

Readings: White et al., Ch. 18

Supplemental Readings on Estimating Ancestry: Gill, 1998; Hefner, 2009

31 Mar (Tu) Joints and muscle actions project

2 Apr (Th) **Joints & Muscle Actions Project Due; Presentations:** Joints and muscle actions

Week 12

7 Apr (Tu) Comparative project

9 Apr (Th) **Quiz 9;** Comparative project

Week 13

Readings: White et al., Ch. 19

Supplemental Reading on Pathology: Skinner and Goodman, 1992; Burns and Kumar, 1997

14 Apr (Tu) Comparative project

16 Apr (Th) **Comparative Project Due; Presentations:** Comparative project

Week 14

Readings: White et al., Ch. 20

Supplemental Reading on Skeletal Plasticity: Lanyon and Rubin, 1985; Ruff, 2000

21 Apr (Tu) Begin Human Case Studies

23 Apr (Th) **Quiz 10;** Case Studies

Week 15

Readings: White et al., Chs. 25-26

28 Apr (Tu) Case Studies

30 Apr (Th) Case Studies

Week 16

Readings: White et al., Chs. 27-28

5 May (Th) Case Studies

7 May (Th) **Quiz 11;** Case Studies

8 May (F) **Case Studies Due**