

## **ANTH 5351/CRIJ 4389 FORENSIC ANTHROPOLOGY (GRADUATE)**

**Class Location: HH 318 LAB**

**Class time: Mon & Wed 11:30am-12:45 am**

### **INSTRUCTOR AND CONTACT INFORMATION**

Instructor: Christine Jones, PhD

Faculty blog: <http://anthrowarrior.blogspot.com>

Office: HH 204C

Contact me via Canvas message or email: [Bioarchjones@tamuct.edu](mailto:Bioarchjones@tamuct.edu)

### **OFFICE HOURS**

Mon & Wed 1pm-2:30pm

### **COURSE DESCRIPTION**

This course is a broad overview of forensic anthropology, the application of the science of physical anthropology to the legal process. Students will learn the techniques used by forensic anthropologists to identify human remains, both skeletal and decomposed. Topics include the determination of age, sex, ancestry, stature, and unique features of a decedent from the skeleton and how these are used to help establish a positive identification. An overview of trauma and other pathological conditions of the skeleton show how forensic anthropologists can provide information to help determine the cause and manner of death. Classes will be a combination of lecture and laboratory exercises.

### **Mode of instruction and course access**

This course meets face-to-face. Check Canvas daily for any course announcements or schedule changes.

### **Student-instructor interaction**

During the week (Mon-Fri) I usually check emails often and respond within 24 hours. I may not respond to weekend emails until Monday or Tuesday. Email is a better way to reach me than Canvas message. If you plan to come to my office hours, please mention it or send me a quick email so I can make sure to have enough time to schedule and see all students.

### **Warrior Shield:**

Emergency Warning System for Texas A&M University-Central Texas

Warrior Shield is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in Warrior Shield through their myCT email account.

Connect to Warrior Shield by [911Cellular](#)

[<https://portal.publicsafetycloud.net/Account/Login>] to change where you receive your alerts or to opt out. By staying enrolled in Warrior Shield, university officials can quickly pass on safety-related information, regardless of your location.

## LEARNING OBJECTIVES

At the end of this course it is expected that students will:

- Have a thorough understanding of the discipline of forensic anthropology at the graduate level
- Learn basic human osteology and identify the various methods used in determining sex, age, and ancestry from human skeletal remains
- Identify the methods used in determining trauma and/or pathological conditions of the human skeleton and explain the steps necessary to establish a positive identification.
- Be able to comprehensively read and critically evaluate scientific publications within the discipline
- Be able to participate meaningfully in classroom lab exercises, showing the ability to think critically beyond their own area of expertise and communicate with colleagues in an academic setting.
- Have acquired the necessary background knowledge to critically evaluate future significant research developments within Biological Anthropology that are typically reported in major scientific journals (Science, Nature, Proceedings of the National Academy of Sciences) as well as the mainstream media.

## REQUIRED READINGS (TEXTBOOKS):

Book Title	Year	Author	ISBN	Ed.	Publisher
Forensic Anthropology	2014	Christensen	9780124186712	1st	Academic
Human Bone Manual	2005	White	9780120884674		Academic

**REQUIRED READINGS (JOURNAL ARTICLES):** Required journal article readings are listed in the course schedule below. It is the responsibility of the student to use the university library to acquire these readings. If difficulties are encountered in acquiring the readings, graduate students should contact the instructor.

## MATERIALS NEEDED:

**Student LAB COAT. A reusable type of these will be on sale in our bookstore soon for approximately 10 dollars.** You can get your own wherever you would like of any material, but it needs to be able to close completely in front. You can get them on Amazon quite inexpensively (<10 dollars). If you are having trouble getting a lab coat please let me know ASAP.

**Reference management software.** Graduate students are required to use reference management software to manage all course readings and citations for their annotated bibliographies. Students should be prepared to submit their electronic reference libraries to the instructor at the end of the course with their annotated bibliography, to demonstrate use of the software. There are many reference management software options available to students, but the instructor recommends **Zotero**, a free and open-

source reference management software to manage bibliographic data and related research materials. [<https://www.zotero.org/>] There are online tutorials through zotero's website and also youtube.com to assist graduate students in using the program.

## COURSE REQUIREMENTS

1. **Lab Safety:** Students must complete the "Lab Safety Module" on Canvas, including the Lab Safety Quiz. Safety equipment locations will be demonstrated in class. After taking the module, students must turn in a hard copy of the Safety Agreement no later than the second day of class, Wed. Aug 28. Failure to complete the module or turn in the safety agreement will result in the student not being able to enter the lab.
2. **Reading assignments:** Readings from the textbooks are listed in the course calendar below. It is best to read the chapters just before the class under which they are listed. Readings from peer-reviewed academic journals are provided as references noted under each week of the course. These readings will be utilized as part of the student's annotated bibliography. It is the student's responsibility to acquire these readings using the e-journals feature of our library website. If further assistance is required, students should contact the library for help with accessing online resources.
3. **In class assignments:** There are 4 total hands-on "lab" participation assignments. 2 of these are based on lectures or readings of new material and 2 of these are related to our fieldwork project. Materials for these assignments (handouts, etc) will be provided on the class day they are assigned. Students must be present to get credit for these assignments (see makeup policy).
4. **Bone Practicals:** There are 6 bone practicals (dates on schedule) spread over the entire course. These are designed to test your knowledge of osteology in particular, divided by section of the body. Each practical consists of a series of stations where you will identify or label casts of bones. Study guides for each section will be provided. Depending on the size of the class we may take practicals with half of the class in group A and half in group B (to be assigned on the day of the practical) where one group will take the practical first and the other will wait. \*\*If students wish to study for practicals using the same skeletal models we have available during lab time they can do so in a classroom (TBD) during Dr. Jones office hours.
5. **Exams:** There will be a midterm and a final exam. Exams will be multiple choice. There may be diagrams or images on the exams. Exams will cover textbook readings, films, lab assignment material, and lecture material and are not cumulative unless stated otherwise. Material covered on the bone quizzes (osteology only) will NOT be on the midterm or final exam.
6. **Annotated Bibliography:** Graduate students will be required to work on an annotated bibliography. Students will present both a draft version and a final completed version of their bibliography. Due dates are noted on the course calendar and full guidelines will be sent to students via Canvas message. A draft bibliography must be submitted on time in order for the final version to be accepted.
7. **Fieldwork Project:** The fieldwork project is a workshop that will involve a simulated burial site on campus where students will learn how to locate and properly excavate a

burial. Graduate students are not required to submit a final report based on fieldwork, but they may be asked to serve as field instructors during the class fieldwork project. Graduate field instructors will assist the instructor in monitoring undergraduates and ensuring they are following appropriate protocol during the burial workshop. Three class days have been reserved for an outdoor workshop in human remains recovery during our normal class time. We will definitely use 2 days and the 3<sup>rd</sup> day is reserved for weather or problems. The actual recovery days will be finalized a week or so beforehand (since weather is a factor). **Please MARK YOUR SCHEDULES NOW.** Prior to the project we will review fieldwork methods in the classroom and further info will be provided.

**Grade posting:** All grades will be posted online; it usually takes about 1 week for me to grade your work. Be assured that I am grading your work as fast as I possibly can.

Coursework	Points
Annotated Bib. Draft	100
Annotated Bib. Final	200
In-class assignments	100
Fieldwork project	100
Bone practicals (6 @ 50)	300
Exams	200
<b>Total:</b>	<b>1000</b>

Points	%	Grade
900 – 1000	90 – 100%	A
800 – 899	80 – 89%	B
700 – 799	70 – 79%	C
600 – 699	60 – 69%	D
0 – 599	0 – 59%	F

### GRADUATE COURSE SCHEDULE (Lecture topics listed by week)

FA=Forensic Anthropology main text, HB=Human bone manual

Practicals cover human bones only, specific info provided on study guides

Labs are in-class lab assignments

#### Week 1: Syllabus & Bone Biology

M Aug 26: Read FA ch 1, HB ch 1 & 3

W Aug 28: Read FA ch 2, HB 4 & 6

#### Graduate readings:

- Boyd, C. and Boyd, D.C. 2011. Theory and the Scientific Basis for Forensic Anthropology *Journal of Forensic Sciences* 56(6): 1407-1415.
- Roberts, L.G. et al. 2016. An Update on the Hazards and Risks of Forensic Anthropology, Part 1: Human Remains. *Journal of Forensic Sciences* 61(s1): s5-s13.

#### Week 2: The skull & Sex determination (skull)

M Sep 2: LABOR DAY, no classes

W Sep 4: **LAB 1 (skull)**, Read HB ch 7, Read FA ch 8

#### Graduate readings:

- Jung, H. and Woo, E. J. 2016. Evaluation of Mastoid Process as Sex Indicator in Modern White Americans using Geometric Morphometrics. *Journal of Forensic Sciences* 61(4): 1029-1033.
- Spradley, M.K., and R.L. Jantz. 2011. Sex Estimation In Forensic Anthropology: Skull Versus Postcranial Elements. *Journal of Forensic Sciences* 56(2): 289-296.
- Tise, M.L., Spradley, M.K. and B.E. Anderson. 2013. Postcranial Sex estimation of Individuals Considered Hispanic. *Journal of Forensic Sciences* 58(S1):S9-S14.
- Walker, P.L. 2008. Sexing skulls using discriminant function analysis of visually assessed traits. *American Journal of Physical Anthropology* 136:39-50.

### **Week 3: Ancestry & Cranial metrics**

M Sep 9: **PRACTICAL 1 (terms)**, Read FA ch 9 and ch 10 up to pg 251

W Sep 11: Read HB ch 8

#### **Graduate readings:**

- Clark et al. 2016. Quantification of Maxillary Dental Arcade Curvature and the Estimation of Biological Ancestry in Forensic Anthropology. *Journal of Forensic Sciences* 61(1): 141-146.
- Edgar, H.J.H. 2013. Estimation Of Ancestry Using Dental Morphological Characteristics. *Journal of Forensic Sciences* 58(s1): S3-S8.
- Spradley, M.K. and R.L.Jantz. 2016. Ancestry Estimation in Forensic Anthropology: Geometric Morphometric versus Standard and Nonstandard Interlandmark distances. *Journal of Forensic Sciences* 61(4): 892-897.

### **Week 4: Odontology & Juvenile Age determination**

M Sep 16: Read HB 9, 10, 11

W Sep 18: **PRACTICAL 2 (skull & teeth)**,

#### **Graduate readings:**

- Rissech, et al. 2013. A Collation of Recently Published Western European Formulae for Age Estimation of Subadult Skeletal Remains: Recommendations for Forensic Anthropology and Osteoarchaeology. *Journal of Forensic Sciences* 58(S1): S163-S168.

### **Week 5: Forensic Context & Shoulder/Thorax**

M Sep 23: Read FA ch 4

W Sep 25: **PRACTICAL 3 (shoulder/thorax)**

**Graduate readings: None this week.**

### **Week 6: Pelvic Girdle & Age/Sex determination**

M Sep 30: **LAB 2 (pelvis)**, Read FA finish ch 10, HB ch 14  
W Oct 2: Read FA ch 12, HB Ch 19 on Age & Sex

**Graduate readings:**

- Brickley, M., Dragomir, A.-M. and L. Lockau. 2016. Age-At-Death Estimates From A Disarticulated, Fragmented And Commingled Archaeological Battlefield. *International Journal of Osteoarchaeology*. 26: 408-419.
- Fleischman, M.S. 2013. A Comparative Assessment Of The Chen Et Al. And Suchey-Brooks Pubic Aging Methods On A North American Sample. *Journal of Forensic Sciences*. 58(2): 311-323.
- Milner, r. and J.L Boldsen. 2012. Transition Analysis: A Validation Study With Known-Age Modern American Skeletons. *American Journal of Physical Anthropology* 148:98-110.
- Villa, C., Buckberry, J., Cattaneo, C. and N. Lynnerup. 2013. Technical Note: Reliability of Suchey-Brooks and Buckberry-Chamberlain Methods on 3D visualizations from CT and laser scans. *American Journal of Physical Anthropology* 151:158-163.
- Walker, P.L. 2005. Greater Sciatic Notch Morphology: Sex, Age, and Population Differences. *American Journal of Physical Anthropology* 127:385-391.

**Week 7: Antemortem Pathology**

M Oct 7: Finish previously assigned chapters  
W Oct 9: Midterm Study Guide

**Graduate readings:**

- Baez-Molgado, S., Penaloza, A.M. Spradley, M.K. and E.J. Bartelink. 2013. Analysis of Bone Healing in a Postoperative Patient: Skeletal Evidence of Medical Neglect and Human Rights Violations. *Journal of Forensic Sciences* 58(4): 1050-1054.
- Burke, K.L. 2012. Schmorl's nodes in an American Military Population: Frequency, Formation, and Etiology. *Journal of Forensic Sciences* 57(3): 571-577.
- Zampetti, S. Mariotti, V., Radi, N. and M.G. Belcastro. 2016. Variation of skeletal degenerative joint disease features in an identified Italian modern skeletal skeleton. *American Journal of Physical Anthropology* 160:683-693.

**Week 8: Midterm**

M Oct 14: **PRACTICAL 4 (pelvis)**. **Graduate Annotated Bibliography DRAFT due today**

W Oct 16: **MIDTERM**,

**Week 9: Taphonomy & Appendages/Stature**

M Oct 21: Read FA ch 5, HB ch 5, 12, 13

W Oct 23: Read FA ch 11, HB ch 15 & 16

**Graduate readings:**

- Jordana, F., Colat-Parros, J. and M. Benezech. 2013. Diagnosis Of Skull Fractures According To Postmortem Interval: An Experimental Approach In A Porcine Model. *Journal of Forensic Sciences* 58(S1): S156-S162.
- Wilson, R.J. et al. 2010. Evaluation of Stature Estimation from the Database for Forensic Anthropology. *Journal of Forensic Sciences*. 55(3): 684-689.

**Week 10: Victim ID & Fieldwork Prep**

M Oct 28: **LAB 3 (fieldwork prep)**, Read FA ch 6, HB ch 2.

W Oct 30: **PRACTICAL 5** (Arms & Legs), Read FA ch 14. Wear Halloween costumes for 5 pts extra credit on practical

**Week 10 Graduate readings:**

- Pietrangeli et al. 2009. Forensic DNA Challenges: Replacing numbers with names of Fosse Ardeatine's victims. *Journal of Forensic Sciences* 54(4): 905-908.
- Verna, E, et al. 2013. Discrete Traits of the Sternum and Ribs: A useful contribution to identification in Forensic Anthropology and Medicine. *Journal of Forensic Sciences* 58(3): 571-577.
- Ubelaker, D.H. and K.M. Zarenko. 2012. Can Handedness be determined from skeletal remains? A chronological review of the literature. *Journal of Forensic Sciences* 57(6): 1421-1426.
- Page, M. et al. 2011. Forensic Identification Science Evidence Since *Daubert*: Part 1—A Quantitative Analysis Of The Exclusion Of Forensic Identification. *Journal of Forensic Sciences* 56(5): 1180-1184.
- Page, M. et al. 2011. Forensic Identification Science Evidence Since *Daubert*: Part II—Judicial Reasoning In Decisions To Exclude Forensic Evidence On Grounds Of Reliability. *Journal of Forensic Sciences* 56(4): 913-917.

**Week 11: FIELDWORK PLANNED**

M Nov 4: **FIELDWORK DAY**, Read FA ch 13

W Nov 6: **FIELDWORK DAY**, Read FA ch 15

**WEEK 12: Trauma Basics & Fieldwork**

M Nov 11: **Happy Veteran's Day (No class)**

W Nov 13: **FIELDWORK DAY**, Read HB ch 17.

**Graduate readings:**

- Nakhaeizadeh, S. et al. 2014. The Power of Contextual Effects in Forensic Anthropology: A Study Of Biasability In The Visual Interpretations Of Trauma Analysis On Skeletal Remains. *Journal of Forensic Sciences* 59(5): 1177-1183.

### **WEEK 13: Trauma and more**

M Nov 18: **LAB 4 (fieldwork lab)**, Read FA ch 3, 7

W Nov 20: HB ch 18, PDF reading to be handed out in class

### **Week 13 Graduate readings:**

- Christensen, A.M and V.A. Smith. 2013. Rib Butterfly Fractures as a Possible Indicator of Blast Trauma. *Journal of Forensic Sciences* 58(S1): S15-S19.
- Reber, S.L. and T. Simmons. 2015. Interpreting Injury Mechanisms of Blunt Force Trauma from Butterfly Fracture Formation. *Journal of Forensic Sciences* 60(6):1401-1411.

### **Week 14: Catch up week, Happy Thanksgiving!**

M Nov 26: Scientific writing guidelines

W Nov 28: READING/STUDY DAY to work on annotated bib. No office hours.

### **Week 15: Trauma cont'd**

M Dec 2: **PRACTICAL 6 (whole skeleton). Graduate Annotated Bibliography**

**Due** (after this time begins late penalty)

W Dec 4: Read Final Study guide

### **Week 16: This is the end ☹**

M Dec 9: Study Session

W Dec 11: **FINAL EXAM**

**\*\*NO MAKEUPS ARE GIVEN FOR PRACTICALS, LABS, OR FIELDWORK DAYS FOR ANY REASON \*\***

## **COURSE PROCEDURES AND POLICIES**

**Handling human skeletal remains in this course:** Throughout this entire course we will be learning using reproduction (plastic) skeletons as well as actual human skeletal remains. Students will be required to handle these materials as part of the course (during practicals and in class lab assignments). We will be excavating simulated burials. If a student is not comfortable handling skeletal remains (either reproduction or actual) or if the idea of digging up a simulated murder victim/burial is difficult for any reason, students should see the instructor as soon as possible to help determine if this course is a right fit.



We will review a number of rules regarding the handling of skeletal remains to ensure they are not damaged during the class, but first and foremost of these involve food and drink. No food or drink (in any container type) is allowed on the same tables as our skeletons, for their safety! This includes candy and gum. Students should stow food and drink away safely in their bag or we can reserve a table/chair for food and drinks. Failure to observe these rules regarding food and drink can result in the instructor asking students to leave the classroom, which may affect their grade and participation in the course. There is no risk to students in terms of eating/drinking after handling these skeletons, but it's strongly recommended that they wash their hands before eating or drinking!

### **Diversity in the Classroom**

Respect for cultural and human biological diversity are core concepts within the Social Sciences. In this course, each voice in the classroom has something of value to contribute to class discussion. Please respect the different experiences, beliefs and values expressed by your fellow students and instructor, and refrain from derogatory comments about other individuals, cultures, groups, or viewpoints. In this course we welcome individuals of all ages, backgrounds, citizenships, disabilities, education, ethnicities, family statuses, genders, gender identities, geographical locations, languages, military experience, political views, races, religions, sexual orientations, socioeconomic statuses, and work experiences.

**Attendance & Makeup:** Attendance is a requirement of this course to succeed because this course involves a lot of hands on work completed during class including taking notes from lectures, practicals, in-class laboratory assignments, the fieldwork days, and each of the exams. If students are not dedicated to coming to this class when it meets, they should consider taking another course.

**\*\*\*\*NO MAKEUPS ARE GIVEN FOR PRACTICALS OR FIELDWORK DAYS FOR ANY REASON \*\*\*\***

Absolutely No Makeups for any reason will be provided for labs, practicals, and fieldwork days. If a student foresee having to miss these days, especially due to a regular event such as work, it is better to drop the course. Makeups for these assignment types are time consuming to set up and administer and cannot be replaced easily with alternative assignments. Do not request this type of makeup.

Students may request a makeup for the midterm exam if the student misses the midterm due to illness or injury for example. To successfully makeup the midterm a student MUST 1. Contact the instructor prior to the missed midterm (or within 24 hours of having missed the assignment in the case of emergencies) for purposes of making it up; 2. Schedule with the instructor ASAP to take a makeup no later than 2 weeks after the original excused absence; and 3. Provide documentation (ex: doctor's note, police report) verifying the reason for the absence. If a student does not meet all three requirements they may be denied the request to makeup the work. Students who miss an exam with no excused absence will receive a zero on the exam. Makeups for final exams are usually

denied because it is not possible to schedule a makeup final before final grades are due. For this reason, makeup final exams are given rarely and with a 20 point deduction (evidence pertaining to a serious emergency will be considered for such a makeup).

### **Late Work**

I accept late DRAFT annotated bibliographies, but with point deductions as follows: 15 points for 1 day late, 30 points for 2 days late, 50 points for 3 days late. After 3 days the paper will not be accepted. I will not accept late FINAL annotated bibliographies.

### **Modification of the Syllabus**

This syllabus may be revised in minor ways at the discretion of the instructor. The student is responsible for noting any changes in the syllabus. More than likely, a change in the syllabus will pertain to events in the Course Schedule.

### ***UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES***

*All University resources, procedures, and guidelines are available online through the A&M-Central Texas Canvas Learning Management System [https://tamuct.instructure.com/] in the modules section.*

### **Copyright Notice.**

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