

Anthropology 325
Death Investigation: Forensic Anthropology Methods
CREIGHTON UNIVERISY

Instructor: Erin-Blankenship-Sefczek, Ph.D. (she/her/hers)

Class Days:

Lecture Meetings:

Lab Meeting:

Lecture Location:

Lab Location:

Office: Creighton Hall 428A

Email: ErinBlankenship-Sefczek@creighton.edu

The best way to reach me out of class and office hours is via email. Please allow for a minimum 24 hours response period from me.

Office Hours:

Required Texts:

Buikstra, JE and DH Ubelaker. 1994. Standards for Data Collection from Human Skeletal Remains: Proceedings of a Seminar at the Field Museum of Natural History (Arkansas Archeological Survey Research Report)

White, TD, and PA Folkens. The Human Bone Manual. 1st Edition. Academic Press.

Steadman, DW. 2008. Hard Evidence: Case Studies in Forensic Anthropology. 2nd Edition. Routledge Press

Course Description:

This course examines the methods used by forensic anthropologists to construct a biological profile of skeletonized human remains which directly aid in a positive identification of the decedent. These methods are used in the investigation and detection of crime, the processing of mass disasters, the recovery of war dead and missing persons, and in international human rights investigations. In the lab portion, students will apply the methods used by forensic anthropologists to hands-on activities using skeletal collections.

Professor Erin Blankenship-Sefczek:

Dr. Erin Blankenship-Sefczek is a Professor of Anthropology at Creighton University. Dr. Blankenship-Sefczek is the Curator of Skeletal Collections for the Mopan-Macal Triangle Archaeological Project, and Director of the Bioarchaeology Laboratory at Creighton University. Her Master's training at San Diego State University focused on determining complete health profiles of past populations. Dr. Blankenship-Sefczek's Ph.D. training at Ohio State continued this foci with an emphasis on dental anthropology, or the evolution of tooth traits.

Dr. Blankenship-Sefczek has two ongoing research projects. As a continuation of her Master's research, she looks at health differences such as weaning age, disease and trauma presence, infection rates between status groups in ancient Maya communities from Belize. Within these

communities, she is also working to better understand the social complexity (archaeological findings) and biological connections (via genetic markers), of the recently recognized ancient Maya “middle class”. The second research project Dr. Blankenship-Sefczek is involved in revolves around identifying the impacts of childhood physiological stress (i.e. malnutrition and disease) and composition of dietary intake on dental development. In particular, she is interested in understanding how these factors influence the presence of accessory cusps and specific dental traits used for determining biological affinity in past populations and forensic identification. Her research includes several peer reviewed publications in *Dental Anthropology Journal* and *Ancient Mesoamerica*.

Course Learning Objectives:

By the end of the course student will be able to

1. Correctly identify human remains
2. Identify and describe alterations (trauma, pathology, etc.) to bones
3. Estimate an individual biological profile (age, sex, ancestry) by employing methods used by forensic anthropologists
4. Interpret and articulate patterns of changes and human variation in a case report format

Doing Natural Sciences Core Objectives:

The following outcomes have been slightly modified to fit this course

1. Students will participate in a direct experience of scientific inquiry in the...natural sciences
 - a. Students will participate in direct experience of scientific inquiry used by forensic anthropologists in a lab setting
2. Students will be able to explain fundamental concepts from a natural science field.
 - a. Students will be able to explain fundamental concepts from the field of forensic anthropology (and biological anthropology)
3. Students will be able to design and conduct an investigation (individually or collaboratively) of questions in the natural sciences using appropriate analytical method for the field.
 - a. Students will be able to design and conduct an investigation of questions in forensic anthropology, individually, using the appropriate analytical methods for the field.

Designated Statistical Reasoning:

1. Students will interpret and present qualitative information verbally, mathematically, statistically, and graphically.
2. Students will apply appropriate technology, quantitative tools and logical models of thinking to analyze and synthesize information in problem solving solutions.

Designated Technology

1. Students will use technology effectively for research, analysis and communication, and collaborative work.
2. Students will recognize that technology and the digitization of knowledge are powerful tools and will identify potential dangers concerning reliability, privacy, security, and equity.

Fit to Core and Mission

This course is designed to fulfill the learning objectives of the Integrations component, Doing Natural Science. The class offers students the opportunity to gain a deep understanding of how forensic anthropologists observe and interpret human remains through application of the methods used by these natural scientists. Starting with an in-depth examination of bone biology, students will gain a basis in how bones develop and can change through a person's life. In lecture, students will examine the theories behind the methods used by forensic anthropologists to estimate biological profile indicators (age, sex, ancestry, etc) and learn the ethics of handling human remains with respect and dignity. Through lab-based osteological analyses, students will apply the methods used by these natural scientists and interpret patterns of change on skeletal remains. As a final project, students will conduct a complete investigation of a skeleton and put together a case report using methods and terminology appropriate to the field of forensic anthropology. The experience of working with human remains will allow students an opportunity to investigate the lethal consequences of inequality through unequal treatment. Furthermore, students will learn the importance of identifying an individual using scientifically tested methods and techniques for the pursuit of justice.

Forensic anthropology is set apart from other forensic science disciplines in that it brings the humanity into the study of crime investigation. Because we can discuss human experiences and lived activities by analyzing patterns found on bone, this course follows the Jesuit charism of *Cura Personalis* by focusing on the development of the whole person and promoting human dignity, and the Creighton mission of seeing "the inalienable worth of each individual." Further still, given that forensic anthropologists work within the medico-legal system, this course follows the Creighton mission of Men and Women For and With Others and Faith That Does Justice by contextualizing how the work of these scientists can bring justice, support and closure to a victim's family as well as the larger society.

Course Requirements:

Assignments for both the lecture and lab portions of this course are evaluated and contribute to the overall final grade. The course grade is based on three exams (equally weighted at 25% of the total grade), lab quizzes (equally weighted at 40% of the final grade), lab activities (equally weighted at 20% of the final grade), the final project (weighted at 10% of the final grade), and participation (weighted at 5% of the final grade).

Lecture portion:

Exams (25% of the final grade)

There will be **three (3)** exams, together worth 25% of your grade. Exams are not cumulative; however, major concepts learned in later sections will build on content covered in previous sections. Each exam will consist of a combination of any of the following: multiple choice, fill-in-the-blank, true/false, identification questions, and short answer/essay questions. Exams are based on course lectures, textbooks, handouts, and any additional readings or films. Refer to the course outline for the dates of the exams and the chapters covered. If you miss an exam you have 24 hours to contact the instructor. Official documentation is required (doctor's excuse, accident report, etc). All make-up exams must be taken within one week after the scheduled exam, otherwise the student will receive a 0% for that exam.

This assignment shows students' learning outcomes in:

1. Students will be able to explain fundamental concepts from the field of forensic anthropology (and biological anthropology)
2. Students will interpret and present qualitative information verbally, mathematically, statistically, and graphically.

Lab portion:

Weekly Lab Quiz (40% of the final grade)

At the start of each lab class, there will be a hands-on lab quiz with 10-12 questions, together worth 40% of your final grade. Come prepared for the quiz by reviewing information from the previous lab. **Because our labs are held within a shared learning space, there will be no opportunity to make up a lab quiz.**

This assignment shows students' learning outcomes in:

1. Correctly identify human remains
2. Identify and describe alterations (trauma, pathology, etc.) to bones
3. Estimate an individual biological profile (age, sex, ancestry) by employing methods used by forensic anthropologists
4. Students will participate in direct experience of scientific inquiry used by forensic anthropologists in a lab setting

Lab Activities (20% of the final grade)

Hands-on labs will be held each week. Together these labs are worth 20% of your final grade. Weekly labs are available on BlueLine and are due at the beginning of class the following lab day (see course schedule for specific topics). To be prepared, you must read through the lab and accompanying readings, print the lab document before the start of each lab class and bring it with you. These exercises are designed to help you understand and apply the information and concepts learned in this course. **Because our labs are held within a shared learning space, there will be no opportunity to make up a lab activity.** You are allowed to miss one (1) lab day. Although, missing a lab day will mean you are not prepared for the following lab quiz. I encourage you to only miss if absolutely necessary. If you are going to miss a lab, you must contact me before the class period.

This assignment shows students' learning outcomes in:

1. Correctly identify human remains
2. Identify and describe alterations (trauma, pathology, etc.) to bones
3. Estimate an individual biological profile (age, sex, ancestry) by employing methods used by forensic anthropologists
4. Students will participate in direct experience of scientific inquiry used by forensic anthropologists in a lab setting
5. Students will interpret and present qualitative information verbally, mathematically, statistically, and graphically.
6. Students will apply appropriate technology, quantitative tools and logical models of thinking to analyze and synthesize information in problem solving solutions.
7. Students will use technology effectively for research, analysis and communication, and collaborative work.
8. Students will recognize that technology and the dignitization of knowledge are powerful tools and will identify potential dangers concerning reliability, privacy, security, and equity.

Final Project (10% of the final grade)

At the end of the semester, instead of a final exam, students will do a full analysis of a human skeleton and write a report usable in a crime investigation. The goal is for students to demonstrate their understanding of forensic theories and methods.

This assignment shows students' learning outcomes in:

1. Correctly identify human remains
2. Identify and describe alterations (trauma, pathology, etc.) to bones
3. Estimate an individual biological profile (age, sex, ancestry) by employing methods used by forensic anthropologists
4. Interpret and articulate patterns of changes and human variation in a case report format
5. Students will be able to design and conduct an investigation of questions in forensic anthropology, individually, using the appropriate analytical methods for the field.
6. Students will interpret and present qualitative information verbally, mathematically, statistically, and graphically
7. Students will apply appropriate technology, quantitative tools and logical models of thinking to analyze and synthesize information in problem solving solutions.
8. Students will use technology effectively for research, analysis and communication, and collaborative work.
9. Students will recognize that technology and the digitization of knowledge are powerful tools and will identify potential dangers concerning reliability, privacy, security, and equity.

Attendance and Participation (5% of the final grade)

Students are expected to actively participate in lecture and lab portions of class by asking and answering questions, adding their thoughts to discussions, and working collaboratively with their lab groups. Four or more unexcused absences from lecture days, will result in a final grade deduction of 4% for each additional time. You are allowed to miss one (1) lab day. If you are going to miss a lab, you must contact me before the class period. Excused absences means that you provide your instructor with proof of your absence BEFORE the missed class period in writing (email, note from institution, sports team, department, ect). The use of electronic devices is not permitted in either the lecture or lab portions of this course.

Extra Credit:

You may earn up to 4% of extra credit in this course. Extra credit opportunities will be presented during the semester.

Policies on Late Assignments:

Given the reliance on lab material for many of the assignments, it is necessary for all assignments to be turned in when they are due. No late assignments will be accepted unless circumstances arise that are out of the student's control. If a student needs to submit an assignment late, they must contact the instructor and arrange the turn-in date. A grade deduction of 10% per day may be applied.

Final Grades will be based on overall performance according to the following breakdown:

Lecture:

Exams (3) 25%

Lab:

Quizzes 40%

Lab Activities 20%

Final Project 10%

Attendance 5%

100% of final grade

Extra Credit 4% (104% possible)

Grading: Final grades will be based on the Creighton Undergraduate Bulletin:

A	93-100%	Outstanding achievement and unusual degree of intellectual initiative
A-	90-92%	Excellent material comprehension and creative application
B+	88-89	High level of intellectual achievement
B	83-87	Noteworthy level of performance
B-	80-82	Sound content understanding and good critical engagement
C+	78-79	Performance beyond basic expectations
C	75-77	Satisfactory work
C-	72-74	Achievement below standard
D	63-71	Work of inferior quality, but passing
F	62 or less	Failure

For a general guide of how you are doing in the class, refer to the grade scale above. Grades cannot be given over the phone or through email; scores will be posted via BlueLine. Please do not call the Cultural and Social Studies Department office regarding grades; contact me directly. Any questions about grading must be submitted in writing and given to the instructor within the first week following the assignment return.

Policies: It is the student's responsibility to read the syllabus and follow class and college policies and procedures.

Academic Honesty: All students should become familiar with the rules governing alleged academic misconduct. It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations (i.e. cheating). In compliance with University policies on academic honesty, instructors shall report all instances of alleged academic misconduct to the college. For additional information reference the Academic Honesty Policy of the College of Arts and Sciences, which includes a description of what constitutes academic dishonesty. The document can be accessed through the link at <http://www.creighton.edu/ccas/currentstudents/studentpolicies/index.php>. Ignorance of the rules governing academic misconduct or ignorance of what constitutes academic misconduct is not an

acceptable defense.

Plagiarism: The unauthorized use of the language and thoughts of another author and the representation of them as one's own.

Cheating: To take an examination in a dishonest way, as by having improper access to answers.

Inclement Weather/Emergency/Class Changes

In cases of unexpected instructor absences information will be posted on Carmen and an email will be sent out to the class.

In the event of a disruption of normal classroom activities due to emergencies such as a disease outbreak the format for this course may be modified to enable completion of the course. In that event, you will be provided an addendum to this syllabus that will supersede this version.

Disability Accommodations:

If a student has any special learning needs or are in circumstances which necessitate individual consideration, please contact Dr. Blankenship-Sefczek within the first week of class and also contact the Assistant Director of the Office of Disability Accommodations (402-280-2166).

Final note:

Grading philosophy: Students *earn* their grades--your final grade is your responsibility. If you have any questions, or need clarification on course material do not hesitate to talk to me. I do not have a grade quota; I am here to help you succeed!

Class Schedule:

This schedule is subject to change. Any changes will be announced in class and posted to BlueLine. It is your responsibility to keep up with schedule changes.

Lecture			Lab			
Week	Topic	Readings	Topic	Quiz	Readings	Due
1	- Syllabus - Introduction to Forensics		- Introduction to Lab/Ethics -Bone Biology		Buikstra Ch 2	
2	Bone Biology, cont.	Buikstra Ch 3	Lab 1: Skull part 1		White: Ch 7	
3	Osteology	Buikstra Ch 3	Lab 2: Skull part 2	1	White: Ch 8	Lab 1
4	Osteology	Buikstra Ch 3	Lab 3: Axial Skeleton	2	White: Ch 9, 10 & 11	Lab 2
5	Forensic Lab Methods	Tilstone et al (2006)	Lab 4: Shoulder girdle	3	White: Ch 12 & 13	Lab 3
6	Medicolegal Context	Pyrek (2007)	Lab 5: Pelvis	4	White: Ch 15 & 16	Lab 4
7	Taphonomy	Nawrocki (2016)	Lab 6: Leg	5	White: Ch 14	Lab 5
8	Biological Profile: Age Estimation	Buikstra Ch 5	Lab 7: Comingled Burials	6		Lab 6
9	Biological Profile: Sex Estimation	Buikstra Ch 6	Lab 8: Subadult Age Estimation	7	White: Ch 19	Lab 7
10	Biological Profile: Ancestry and Stature Estimation	Steadman Ch 1	Lab 9: Adult Age Estimation	8	White: Ch 19	Lab 8
11	Trauma Analysis	Steadman Ch 2	Lab 10: Ancestry Estimation, Non-metric variation	9	White: Ch 19	Lab 9
12	Trauma Analysis	Steadman Ch 3	Lab 11: Stature	10	White: Ch 19	Lab 10
13	Personal Identification	Kanchan and Krishan (2013)	Lab 12: Trauma	11	White: Ch 18	Lab 11
14	Case Studies	Steadman Ch 4	Lab 13: Forensic Odontology	12		Lab 12
15	Case Studies	Steadman Ch 5	OPEN LAB STUDY DAY			Lab 13
FINALS WEEK: FINAL PROJECT						