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Course Outline for ANTR 13

INTRODUCTION TO FORENSIC ANTHROPOLOGY

Effective: Fall 2019

I. CATALOG DESCRIPTION:

ANTR 13 — INTRODUCTION TO FORENSIC ANTHROPOLOGY — 3.00 units

Introductory course in the application of physical anthropology to the medico-legal process with an emphasis on the identification of human skeletal remains. Includes basic human osteology and odontology, assessment of age at time of death, sex, ancestry, trauma analysis, pathology, and general physical characteristics including height and weight based upon minimal skeletal remains. Estimation of time since death, crime scene analysis, animal scavenging, and identification procedures.

3.00 Units Lecture

Strongly Recommended

- Eligibility for ENG 1A -

Grading Methods:

Letter or P/NP

Discipline:

- Anthropology

	MIN
Lecture Hours:	54.00
Total Hours:	54.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

Before entering this course, it is strongly recommended that the student should be able to:

- A. -Eligibility for ENG 1A
 1. Respond critically to a text through class discussions and writing
 2. Write effective summaries of texts that avoid wording and sentence structure of the original
 3. Organize coherent essays around a central idea or a position
 4. Provide appropriate and accurate evidence to support positions and conclusions
 5. Produce written work that reflects academic integrity and responsibility, particularly when integrating the exact language and ideas of an outside text into one's own writing

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

- A. Distinguish human from non-human skeletal remains
- B. Identify aspects of crime scene investigation imperative to analysis by forensic anthropologists and pathologists
- C. Assist forensic scientists in both laboratory and field settings
- D. Determine the sex of a human skeleton
- E. Estimate the ancestry of a human skeleton
- F. Estimate age at death for a human skeleton
- G. Deduce the source of skeletal trauma
- H. Differentiate between methods used to establish time since death for a set of human remains

V. CONTENT:

- A. Introduction to forensic anthropology
 1. Historical background and methodology
 - a. Data gathering and analysis
- B. Basics of human osteology and odontology
 1. Overview of the human skeleton
 - a. Cranial and postcranial skeleton
 - b. Bone anatomy and growth
 - c. Human dentition
 - d. Human and non-human skeletal distinctions
 1. Morphological differences
 2. State of preservation

- C. Recovery scene
 - 1. Locating remains
 - 2. Site preparation and mapping
 - 3. Preliminary excavation
 - 4. Marking remains
 - 5. Evidentiary chain of custody
- D. Time since death
 - 1. Estimating TSD of surface finds
 - 2. Estimating TSD of buried remains
 - 3. Effects of scavenging
 - 4. Using local flora and fauna and entomology to estimate TSD
 - 5. Decomposition of associated materials
- E. Forensic anthropology laboratory
 - 1. Preparation of remains
 - 2. Reconstruction
 - 3. Inventorying of remains
- F. Determining ancestry
 - 1. Cranial skeleton
 - 2. Postcranial skeleton
- G. Determining sex
 - 1. Pelvis
 - 2. Skull
 - 3. Various bones
 - 4. Subadults
- H. Age at death
 - 1. Subadults
 - 2. Adults
- I. Determination of height
 - 1. Basics
 - 2. Full Skeleton
 - 3. Partial skeleton
 - 4. Adjustments
 - a. Age
 - b. Shrinkage
- J. Death and trauma
 - 1. Cause of death
 - 2. Bone trauma basics
 - 3. Characteristics of force
 - a. Direction of force
 - b. Speed of force
 - c. Focus of force
 - 4. Types of trauma
 - a. Blunt force
 - b. Sharp force
 - c. Projectile
 - d. Miscellaneous
 - 5. Timing of injury
 - a. Antemortem
 - b. Perimortem
 - c. Postmortem
- K. Projectile trauma
 - 1. Basics of ammunitions and firearms
 - 2. Basics of bullet travel
 - 3. Effects of bullets on bone
 - 4. Bullet wound analysis
 - 5. Pellet wound analysis
 - 6. Miscellaneous projectiles
- L. Blunt trauma
 - 1. Types of instruments
 - 2. Effects of blunt instruments on skeleton
 - 3. Wound analysis
- M. Sharp and miscellaneous trauma
 - 1. Sharp instruments
 - a. Effects
 - b. Wound analysis
 - 2. Strangulation
 - 3. Chemical trauma
- N. Antemortem skeletal conditions
 - 1. Pathologies
 - 2. Anomalies
 - 3. Occupational stress markers
- O. Postmortem changes to bone
 - 1. Dismemberments
 - a. Basics of saws and saw damage
 - b. Analysis of saw marks
 - 2. Animal scavenging
 - a. Carnivores
 - b. Rodents
 - 3. Fire damage
 - 4. Weathering
 - 5. Burial damage
 - 6. Water damage
 - 7. Miscellaneous damage
- P. Identification
 - 1. Facial reconstruction
 - 2. Determining handedness
 - 3. Body weight
 - 4. Antemortem identification
 - a. Radiography
 - b. Photographic superimposition

- c. Forensic odontology
- d. Miscellaneous techniques
- Q. Conclusions
 - 1. Ethics
 - 2. Final report
 - 3. Courtroom testimony

VI. METHODS OF INSTRUCTION:

- A. **Lab** -
- B. **Projects** -
- C. **Discussion** -
- D. Reading
- E. **Lecture** -
- F. **Field Trips** -

VII. TYPICAL ASSIGNMENTS:

- A. Reading
 - 1. Read the section of your text on basic cranial anatomy.
- B. Laboratory
 - 1. Identify the primary areas of the postcranial skeleton most useful in determining age at time of death.
- C. Project
 - 1. You are the first responder to a report of a body in a field. Utilizing SOAP (Subjective and Objective information, Assessment of findings, and Plan of action), survey, map and evaluate the scene, noting position of body and associated materials, weather, type of area (park, farm, etc.), and associated injuries to the body. Develop your plan of action for forensic evidence collection and site preservation.
- D. Field trip
 - 1. Coroner's office

VIII. EVALUATION:

Methods/Frequency

- A. Exams/Tests
 - Approximately three non-comprehensive exams and a comprehensive final exam
- B. Projects
 - End of term evaluation of project

IX. TYPICAL TEXTS:

- 1. Byers, S.H. (2016). *Introduction to Forensic Anthropology* (5th ed.). New York, NY: Routledge.
- 2. Nafte, M. (2016). *Flesh and Bone: An Introduction to Forensic Anthropology* (3rd ed.). Durham, NC: Carolina Academic Press.
- 3. Ubelaker, D.H. (2015). *The Global Practice of Forensic Science* (1st ed.). Hoboken, NJ: Wiley-Blackwell.
- 4. Mann, R.W. (2017). *The Bone Book: A Photographic Lab Manual for Identifying and Siding Human Bones* (1st ed.). Springfield, IL: Charles C Thomas Pub Ltd.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. None