

# ANTH 13L: FORENSIC ANTHROPOLOGY LABORATORY

## Foothill College Course Outline of Record

Heading	Value
<b>Units:</b>	1
<b>Hours:</b>	3 laboratory per week (36 total per quarter)
<b>Corequisite:</b>	Completion of or concurrent enrollment in ANTH 13.
<b>Degree &amp; Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Area III: Natural Sciences
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

## Student Learning Outcomes

- Students will practice and apply understandings of forensic anthropology in the laboratory.
- Students will learn how to critically analyze and interpret forensic anthropological data in the laboratory.
- Students will apply anthropological principles in the laboratory for solving human problems on the local, regional and world scales.

## Description

Introductory laboratory course focusing on scientific methodology to reinforce topics from Forensic Anthropology lecture sections using hands-on technical training. Focuses on the relationship between biology and forensic anthropology, general anthropological method and theory, and specifically in this case on the medico-legal process utilized in forensics with an emphasis on the identification of human skeletal remains and evidence description. Contains exercises in identifying basic human osteology/odontology elements and morphological features. Will include standardized procedures for the assessment of age at time of death, sex, ancestry, trauma analysis, pathology, physical characteristics including height and weight, crime scene analysis, animal scavenging, and identification procedures. Focuses on how laboratory conclusions are utilized in courtroom proceedings during expert witness testimony.

## Course Objectives

The student will be able to:

- Distinguish forensic scientific methodology from other methods of evaluation or thinking.
- Demonstrate an understanding of biological processes.
- Differentiate human skeletal remains from animal skeletal remains.
- Identify the bones of the human body and major morphological landmarks.
- Identify aspects of crime scene investigation imperative to analysis by forensic anthropologists and pathologists.
- Identify appropriate methods for preparation and reconstruction of remains in the laboratory.
- Determine the cause of death due to trauma by assessing different types of ante-, peri-, and postmortem changes to bone.

- Identify and describe common pathology, trauma, and natural anomalies.
- Determine the age, sex, stature, and handedness of human skeletal remains.
- Interpret taphonomic processes and archaeological methods.
- Practice evidence presentation in a mock-judicial setting.

## Course Content

A. Students will demonstrate knowledge in the following areas:

- Rise of biological science and the scientific method as related to forensic science and the medicolegal mode for methodology.
- Basic processes of biology.
- Recovery scene methodology/protocols/field documentation.
- Osteology and odontology identification of individual elements and major morphological features.
- Determining sex.
- Determining age at death.
- Death and trauma.
- Blunt and projectile trauma.
- Antemortem skeletal conditions.
- Postmortem changes to bone.
- Aspects of individualization.
- Forensic anthropology in practice.

B. Students conducting laboratory research will gain proficiency in the following areas:

- Use of instrumentation, such as microscopes, spreading and sliding calipers.
- The appropriate handling of human remains.
- Crime scene investigation techniques.
- Data gathering and analysis using current statistical and mapping programs.
- Graphing and interpretation of data using scientific methodology.

## Lab Content

Projects cover methods, techniques, and procedures used in forensic anthropology research. Emphasis on skill, quantitative/qualitative methods, demonstrations, critical thinking, basics of biology, scientific method and theory and problem solving.

A. Students will demonstrate knowledge in the following areas:

- Scientific method as related to forensic science and the medicolegal mode for methodology
  - Exercise: Data gathering and analysis
  - Exercise: Instrumentation and measuring
- Recovery scene methodology/protocols/field documentation
  - Exercise: Mapping and diagram
  - Exercise: Surface-deposited body
  - Exercise: Interred body
  - Exercise: Non-human versus human bone
- Osteology and odontology identification of individual elements and major morphological features
  - Exercise: Cranial and postcranial skeleton
  - Exercise: Human dentition
- Determining sex
  - Exercise: Pelvis
  - Exercise: Skull
  - Exercise: Subadults
- Determining age at death
  - Exercise: Adult
  - Exercise: Subadult
  - Exercise: Calculation of stature
- Death and trauma

- a. Exercise: Bone trauma basics
- b. Exercise: Types of trauma
- c. Exercise: Timing of injury
- 7. Blunt and projectile trauma
  - a. Exercise: Blunt trauma cranial/post-cranial
  - b. Exercise: Analysis of projectile wounds
- 8. Antemortem skeletal conditions
  - a. Exercise: Common pathologies
  - b. Exercise: Anomalies
  - c. Exercise: Occupational stress markers
- 9. Postmortem changes to bone
  - a. Exercise: Basics of saws and saw damage
  - b. Exercise: Other postmortem damage
- 10. Aspects of individualization
  - a. Exercise: Radiography facial reproduction
  - b. Exercise: Comparisons of dental records
- 11. Forensic anthropology in practice
  - a. Exercise: Final report writing
  - b. Exercise: Expert witness testimony

## Special Facilities and/or Equipment

Anthropology laboratory with lab facilities.

## Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

- A. Out-of-class problem sets
- B. Lab reports
- C. Quizzes
- D. Skill demonstrations or problem solving
  - 1. Class participation
  - 2. Field work
  - 3. Practicum exams

## Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

- A. Lectures
- B. Laboratory demonstrations
- C. Laboratory exercises

## Representative Text(s) and Other Materials

Byers, Steven N. Forensic Anthropology Lab Manual. 2nd ed. Allyn and Bacon, 2007.

Mirakovits, Kathy, and Gina Londino. The Basics of Investigating Forensic Science: A Laboratory Manual. CRC Press, 2015.

Saferstein, Richard. Basic Laboratory Exercises for Forensic Science. Criminalistics: An Introduction to Forensic Science. 2nd ed. Prentice Hall, 2010.

Siegel, Jay, and Kathy Mirakovits. Forensic Science: The Basics. 3rd ed. CRC Press, 2015.

## Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

- A. Laboratory exam 1: Explain the methods used to process a crime scene along with any evidence collected. Student should describe and explain:
  - 1. Legal considerations in processing a crime scene.
  - 2. The significance of physical evidence.
  - 3. Different types of evidence found at crime scenes, including hair, fibers, blood, glass, body fluids, fingerprints, documents.
  - 4. The different testing available for each type of found evidence.
    - a. Glass, comparing fragments, preservation, types, properties.
    - b. Soils, different types.
    - c. Hair, fiber and paints, characteristics, man-made vs. human.
    - d. Alcohol and drugs characteristics in determining drug identification.
    - e. Toxicological findings and the toxicology report.

## Discipline(s)

Anthropology