

# ANT 330 FORENSIC ANTHROPOLOGY

**INSTRUCTOR:** Jim Wanner, Ph.D.

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**OFFICE HOURS:** MWF 7:00-8:00, 9:00-10:00, TR 9:00-12:00

**OBJECTIVES:** To impart basic knowledge of human skeletal anatomy, skill at bone identification, aging and sexing skeletal material, osteometric measurement, stature estimation, estimating population affiliation, and evaluating cause of death from skeletal information.

**TEXT:** Byers, Steven 2002 Introduction to Forensic Anthropology. Allyn and Bacon, Boston.

**TESTS:** Three tests covering skeletal anatomy, bone identification, aging, sexing, stature estimation, and population affiliation will be given during the semester. Exercises and readings will be assigned to illustrate and amply various topics.

A= 100-90%, B= 89-80, C= 79-70, D=69-60, F=< 59.

Students with disabilities who believe they may need accommodations in this class are encouraged to contact the Disability Support Services (351-2289) as soon as possible to better ensure that such accommodations are implemented in a timely fashion.

## TOPICAL OUTLINE

1/15-1/16

### 1. Introduction

- 1.1 Historical Background
- 1.2 Forensic Anthropologists and the Medicolegal Community
- 1.3 The Forensic Anthropology Protocol
- 1.4 Introduction to Methods of Skeletal Analysis

1/21-2/4

### 2. Human Osteology and Odontology

- 2.1 Cranial Skeleton
- 2.2 Axial Skeleton
- 2.3 Overview of Human Dentition

2/6-2/13

**3. Establishing the Forensic Context**

3.1 Human vs Nonhuman

3.2 Contemporary vs Noncontemporary

2/16 TEST

2/18-2/20

**4. Recovery Scene Methods**

4.1 Locating Remains

4.2 Mapping, Excavation and Collection

4.3 Mass disasters

2/23-2/25

**5. Estimating Time Since Death**

5.1 Decomposition and Skeletalization

5.2 Animal Scavenging

5.3 Forensic Entomology and Botany

2/27-3/4

**6. Initial Treatment and Examination**

6.1 Preparation of Remains

6.2 Sorting, Reassembly, Reconstruction

6.3 Inventory

3/6- 3/13

**7. Ancestry**

7.1 Anthroposcopic Evaluation

7.2 Anthropometric Evaluation

3/23-3/30

**8. Attribution of Sex**

8.1 Sexing the Pelvis

8.2 Sexing the Skull

8.3 Other Methods

8.4 Sexing Subadults

4/1-4/6

**9 Estimation of Age at Death**

9.1 Subadults

9.2 Adults

4/8 TEST

4/10-4/15

**10. Estimation of Stature**

10.1 Long Limb Bones

10.2 Other Skeletal Elements

10.3 Partial Long Limb Bones

10.4 Adjustments to Stature

4/17-4/20

**11. Death, Trauma and the Skeleton**

11.1 Cause and Manner of Death

11.2 Bone Trauma and Forces Causing Trauma

11.3 Types of Trauma

11.4 Timing of Bone Injury

4/22-4/24

**12. Projectile Trauma**

12.1 Ammunition and Firearms

12.2 Bullet Travel

12.3 Effects of Bullets on Bone

12.4 Bullet Wound Analysis

4/27

**13. Blunt Trauma**

13.1 Blunt Instruments and Their Effects

13.2 Wound Analysis

4/29

**14 Sharp and Miscellaneous Trauma**

14.1 Sharp Instruments and their Effects

14.2 Wound Analysis

**FINAL**

## **BIBLIOGRAPHY**

Anthropometry, Assassinations, and Aircraft Disasters: A Career in Forensic Anthropology. Anthropology Newsletter, 1982. In Podolefsky and Brown Applying Anthropology: An Introductory Reader

Snow, Clyde C. And James L Luke 1970. The Oklahoma City Child Disappearance: Forensic Anthropology in the Identification of Skeletal Remains. Journal of Forensic Sciences. In Podolefsky and Brown (eds.) Applying Anthropology: An Introductory Reader.

### **I. INTRODUCTION TO THE STUDY OF HUMAN SKELETAL ANATOMY. 9/3**

#### **Why Study the Skeleton**

#### **The Human Skeleton as Part of the Living Organism**

##### Functions

- Shelters
- Supports
- Provides rigidity
- Stores mineral salts (e.g. calcium)
- Produces red blood cells
- Provides leverage
  - First Class Levers
  - Second Class Levers
  - Third Class Levers

206 bones plus sesamoids and occasional supernumerary ribs  
800 centers of ossification

Two major divisions of the skeleton

- axial
- appendicular

#### **Anatomical Terms and Definitions**

##### Terms of Orientation

- Planes
  - Coronal (frontal)
  - Sagittal
  - Transverse
- Direction

- Medial
- Lateral
- Anterior
- Posterior
- Proximal
- Distal
- Cranial (rostral)
- Caudal
- Superior
- Inferior
- Types of Joints
  - Fibrous
    - Syndesmoses
    - Synarthrosis (sutures)
    - Gomphosis
  - Cartilagenous
    - Symphysis: joined by fibrocartilage
    - Synchondrosis: joined by hyaline cartilage:sutures

#### Movements

- Abduction
- Adduction
- Extension
- Flexion
- Rotation
- Gliding
- Supination
- Pronation
- Plantarflexion
- Dorsiflexion
- Circumduction
- Opposition

#### The Care of Anatomical Specimens

#### The Measurement of Bone

Osteometric Instruments

Anthropometer  
Spreading Caliper  
Small vernier sliding caliper

Measurement Reliability

Exercise:

Everyone take two humeral measurements.  
Maximum Length  
Biepicondylar Breadth  
Calculate Means and Standard Deviations

## References

Buikstra, J.E., and Ubelaker, D.H. 1994. Standards for Data Collection from Human Skeletal Remains. Fayetteville, Arkansas: Arkansas Archaeological Survey Report Number 44.