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ANTY 416.01: Dental Anthropology

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Anthropology 416

Dental Anthropology

Instructor: Dr. Corey Ragsdale
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Office hours: TR 2:00 to 3:30

Course Description:

This is a laboratory class that explores the application of data from human and non-human dentitions to anthropological questions. Topics covered include dental anatomy, development, evolution, variation, and pathology. Material is presented through lecture, discussion, and through hands-on laboratory exploration. Students in this course will learn of dental anatomy, embryology, genetics, function, metrics, and morphology. They will develop a basic understanding of how dental information informs us about human evolution, and how it can be applied in studies of human biology, population health, bioarchaeology and forensic anthropology.

Required Readings:

Hillson S. 1996. Dental anthropology. Cambridge University Press.

Additional readings will be provided online and include readings from:

Bailey SE, Hublin J-J (eds). 2009. Dental perspectives on human evolution: state-of-the-art research in dental paleoanthropology. Springer.

Koppe T, Meyer G, Alt K (eds). 2009. Comparative Dental Morphology. Frontiers of Oral Biology 13. Basel: Karger.

Irish JD, Nelson GC. 2008. Technique and application in dental anthropology. Cambridge University Press.

Scott GR, Turner CG II. 2000. The anthropology of modern human teeth. Cambridge University Press.

Grading:

Quizzes (3): 35%

Lab reports (4): 35%

Research project: 30%

Quizzes

Quizzes will be given throughout the semester to ensure you are keeping up with the material. These quizzes will be **practical**. There are NO make-up quizzes without documentation of extreme circumstances (see attendance policy below).

Lab reports

Laboratory reports are assigned throughout the semester that will combine large themes of the course with hands on exercises. These reports must be typed, with observations and notes

attached (note: handwritten notes and scoresheets are acceptable). These lab reports will be due **one week** from when the lab exercise is completed. Late lab reports are accepted, with a **10%** reduction of points every weekday (not class session) passed the deadline. Late lab reports can be turned into my department mailbox.

Research project

A final research report accounts for nearly 1/3 of the total grade, and is designed to synthesize the information learned throughout the course. Final projects can be literature reviews, practical studies of dentitions in the UM collections, other original analyses, or some combination of these approaches. Specifics on this project will be discussed in class.

All written assignments are due at the beginning of the class period on the date specified.

Attendance

As this is a laboratory class, there is no way to make up the material lost through an absence. Lectures will not be repeated. A doctor's note or letter from the registrar is required for ALL CASES in which a quiz. NO EXCEPTIONS. An upcoming absence due to a death in the family, military/ROTC orders, or university athletics can be accommodated with ample time (at least one week before), and official documentation.

You should expect to spend several hours every week reading, and take full advantage of provided lab time. It is your responsibility to arrange your schedule to access these hours.

Course Schedule:

Week 1 (1/26-1/28)

- Introduction
- Dental terminology

Readings: Hillson, chapters 1, 2 (pp. 6-13), 13

Week 2 (2/2-2/4)

- Dental anatomy: the permanent anterior teeth

Readings: Hillson, chapter 2 (pp. on permanent incisors and canines)

Week 3 (2/9-2/11)

- Dental anatomy: the permanent mandibular teeth

Readings: Hillson, chapter 2 (pp. on permanent premolars and molars)

Week 4 (2/16-2/18)

- Dental anatomy: the deciduous dentition

Readings: Hillson, chapter 2 (pp. on deciduous teeth)

Week 5 (2/23-2/25)

- **Quiz 1: Dental anatomy Tuesday, 2/23**
- Dental evolution

Readings: Bailey and Hublin, Part I, 1, 2

Week 6 (3/1-3/3)

- Dental evolution (continued)
- **LAB 1: Dental anatomy drawings due Thursday, 3/3**
- Occlusion

Readings: Hillson, chapter 4; Koppe et al., Section II, 2 and Section VI, 7

Week 7 (3/8-3/10)

- **LAB 2: Dental evolution report due Thursday, 3/10**
- Dental development and eruption

Readings: Hillson, chapter 5

Readings: Bailey and Hublin, Part III, 3; Scott and Irish, 4

Week 8 (3/15-3/17)

- Dental development and eruption (continued)

Readings: Irish and Nelson, Section III, 9, 10

Week 9 (3/22-3/24)

- **Quiz 2: Dental evolution and development Tuesday, 3/29**
- Histology and biochemistry

Readings: Hillson chapters 6, 7, 10; Bailey and Hublin, Part II, 1, 2; Irish and Nelson, Section II, 4

Week 10 (3/29-3/31)

- Dental disease

Readings: Irish and Nelson, Section II, 6,7; Koppe et al. Section 6, 2

Week 11 (4/5-4/7)

SPRING BREAK-NO CLASSES

Week 12 (4/12-4/14)

- Tooth wear and cultural treatment

Readings: Hillson, chapters 11, 12; Irish and Nelson, Section IV, 17

Week 13 (4/19-4/21)

- **LAB 3: Dental health report due Thursday, 4/28**
- Metric variation and asymmetry

Readings: Hillson chapter 3 (pp. 68-85)

Week 14 (4/26-4/28)

- **Quiz 3: Dental disease and morphology Tuesday, 5/3**
- Non-metric variation

Readings: Scott and Turner, chapters 2 and 5; Turner CG II, Nichol CR, and Scott GR. 1991. Scoring procedures for key morphological traits of the permanent dentition: the Arizona State University Dental Anthropology System. In Kelley M, Larsen CS, editors. Advances in dental anthropology. New York: Wiley-Liss. p 13–31.

Week 15 (5/3-5/5)

- Dental applications in forensics

Reading: Edgar HJH. 2012. Estimation of ancestry using dental morphological characteristics. Journal of Forensic Science.

- **LAB 4: Dental metrics and morphology report due 5/5**
- **FINAL PROJECT DUE 5/5**

Class and Lab rules

- Do not be late to class.
- Turn off cell phones and pagers during class. Do not text message during class.
- You may work together at stations in class or during extra lab hours. Help and consult with your fellow students. However, all lab reports must be written individually.
- When handling skeletal materials:
 - Always treat human remains with the respect they deserve
 - Always hold remains with two hands over a table
 - Always place skulls on a skull ring for security. Never put a skull down on the table on its teeth.
 - No food or drink (other than a sports bottle of water) is allowed in class or in the Osteology Lab.
 - When working with human remains, the bones, paper and a writing utensil may be on the table. Never have books or book bags on a table at the same time as bones.
 - Never remove skeletal material or lab tools from your work area unless specifically instructed to by the instructor or a Lab assistant.
- Failure to follow these rules will result in the loss of points towards your grade.