

Advanced Human Osteology

TIME & PLACE: T period 5-6, R period 6 TUR 1208J

INSTRUCTOR: David Daegling, B376 Turlington Hall (352) 294-7603 daegling@ufl.edu
Office Hours: M 10:30-11:30 AM; R 2:00 – 4:00.

COURSE OBJECTIVES: This course provides a foundation in human skeletal biology. Bone biomechanics, adaptation, physiology and their applications in forensic, bioarchaeological, clinical and comparative contexts are emphasized.

PREREQUISITE: Grade of B or better in ANT 4525, *Human Osteology and Osteometry*

TEXTBOOK: Burr DB, Allen MR (2013) *Basic and Applied Bone Biology*. Elsevier (required).

STUDENT LEARNING OUTCOMES: Successful completion of the course will provide students with methodological and analytical foundations in the following:

- Epigenetic influences on skeletal growth and development
- Biological profile from skeletal remains
- Structural and material properties of bone
- Biomechanics of the skeleton
- Bone metabolic activity
- Skeletal adaptation

COURSE REQUIREMENTS: Emphasis on in-class participatory activities compels regular attendance. The grading criteria for the course include individual and group quizzes, participation in group problem-solving activities, and peer evaluation. Weighting of criteria will be determined in Week 1 and posted.

OTHER POLICIES: Academic dishonesty in any form will not be tolerated and is subject to university policy (University of Florida Rules - 6C1-4 Student Affairs), which includes provisions for expulsion. Students requesting classroom accommodation must first register with the Dean of Students Office (DSO), which provides documentation to the Instructor when student has requested accommodation. Students experiencing personal problems that are interfering with their academic performance are encouraged to contact the University Counseling Center (301 Peabody Hall, 392-1575), Student Mental Health (Student Health Care Center, 392-1171), or Sexual Assault Recovery Services (Student Health Care Center, 392-1161).

COURSE ADMINISTRATION: Syllabi, assignments, datasets, resources, and readings will be distributed through the CANVAS platform in e-learning: <http://lss.at.ufl.edu/>.

COURSE SCHEDULE

Week/Date	Topic	Reading
1 (1/9) (1/11)	Course structure and group assignments Bone morphology and organization	Chapter 1
2 (1/16) (1/18)	ISSUE: Identification algorithm, MNI Bone cells	Christensen 1992; Casteel 1977 Chapter 2
3 (1/23) (1/25)	ISSUE: Aging the skeleton Local regulation of bone cells	Osborne et al. 2004; Lovejoy et al. 1985 Chapter 3
4 (1/30) (2/1)	ISSUE: Sexing the elbow Modeling and Remodeling	Kothapalli et al. 2013; Tise et al. 2013 Chapter 4
5 (2/6) (2/8)	ISSUE: Secondary bone function Imaging and Histomorphometry	Bouvier & Hylander 1996; Martin 2002 Chapters 5, 7
6 (2/13) (2/15)	ISSUE: Mineral variation Tissue Mechanics	Rouch & Schoenau 2001 Chapter 6
7 (2/20) (2/22)	ISSUE: Bone strength Skeletal Genetics	Trinkaus 1997; Stock 2006 Chapter 8
8 (2/27) (2/29)	ISSUE: Ancestry Skeletal Adaptation	Sauer 1992; Konigsberg et al 2009 Chapter 9
9 (3/13) (3/15)	ISSUE: Dynamic strain similarity Fracture Healing	Rubin & Lanyon 1984; Frost 1992 Chapter 10
10 (3/20) (3/22)	ISSUE: Fixation Growth and Development	Kenwright et al. 1991 Chapter 12
11 (3/27) (3/29)	ISSUE: The osteological paradox Bone as an Endocrine Organ	Wright & Yoder 2003 Chapters 13, 15
12 (4/3) (4/5)	ISSUE: Exercise Nutrition	Forwood & Burr 1993; Luu et al. 2009 Chapter 14
13 (4/10)	ISSUE: Drink your milk	Eaton & Nelson 1991
14 (4/17) (4/19)	Pathology and Treatments ISSUE: Osteoporosis	Chapters 16, 17 Frost 1997; Von Stengel et al. 2011
15 (4/24)	ISSUE: Interpreting Fossils	Russell 1985