Course Objectives

This course reviews in detail human skeletal anatomy for the proper identification of the bones in the body, their biomechanical articulations and their relationship with the muscular system. Focus is then directed to studying forensic methods and techniques for the estimation of age at death, determination of chromosomal sex, the study of morpho-metric and non-metric variation in the skeleton, assessment of bone remodeling, cultural modifications to bone, and the impact of environmental processes on bony tissue. Hands-on laboratory sessions will involve team analysis of human remains from the comparative collection in the Archaeology Laboratory at Brandeis.

Learning Goals

The learning goals of the course is for students to have full command of human skeletal anatomy and of basic forensic techniques, to learn how to design and carry out scientifically oriented research, and to practice how to do teamwork during the class project. Research involves the use of both quantitative and qualitative approaches, the formulation of explicitly stated hypotheses, and their rejection on the bases of the analysis of evidence. In addition, students will have the opportunity to further develop their analytical and synthetic abilities, as well as hone in on their writing skills.
Course Outline (*sessions marked with an asterisk will involve group discussion based on the assigned readings. Students are expected to generate two or three questions for discussion)

<table>
<thead>
<tr>
<th>Sessions</th>
<th>Topics</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug W 30</td>
<td>Introduction to the course</td>
<td>None</td>
</tr>
<tr>
<td>Sept W 6</td>
<td>Generalities</td>
<td>Bass 1987</td>
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<tr>
<td></td>
<td>The Skull</td>
<td>Schwartz pp. 1-12 and Chap 2</td>
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<tr>
<td>Sept M 11</td>
<td>The Skull (cont.)</td>
<td>Schwartz Chap 3</td>
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<tr>
<td>Sept W 13</td>
<td>The Skull (cont.)</td>
<td>Scheuer &amp; Black Chapter 4</td>
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<td>Sept M 18</td>
<td>Dentition</td>
<td>Schwartz Chapter 7</td>
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<td>Scheuer &amp; Black Chapter 5</td>
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<tr>
<td>Sept W 20</td>
<td>Postcranium: Axial skeleton</td>
<td>Schwartz Chapter 4</td>
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<td>Lecture by Sarah Schofield-M</td>
<td>Scheuer &amp; Black Chapters 6-7</td>
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<tr>
<td>Sept M 25</td>
<td>Postcranium: Upper extremities</td>
<td>Schwartz Chapter 5</td>
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<tr>
<td>Sept W 27</td>
<td>Postcranium: Upper extremities</td>
<td>Scheuer &amp; Black Chapters 8-9</td>
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<tr>
<td>Oct M 2</td>
<td>Postcranium: Lower extremities</td>
<td>Schwartz Chapter 6</td>
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<tr>
<td>Oct W 4</td>
<td>Postcranium: Lower extremities</td>
<td>Scheuer &amp; Black Chapters 10-11</td>
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<tr>
<td>Oct M 9</td>
<td>Postcranium: Lower extremities</td>
<td>Scheuer &amp; Black Chapters 10-11</td>
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<tr>
<td>Oct M 16</td>
<td>FIRST EXAM</td>
<td>None</td>
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<tr>
<td>Oct M 23</td>
<td>Exam review</td>
<td>Ubelaker 1989: 63-95</td>
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<tr>
<td>Oct W 25</td>
<td>Forensic techniques: Assessment of age at death part 1</td>
<td>Iscan and Loth 1989</td>
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<tr>
<td>Oct M 30</td>
<td>Forensic techniques: Assessment of age at death part</td>
<td>Ubelaker 1989: 52-60</td>
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<tr>
<td>Nov W 1</td>
<td>Forensic techniques: Determination of chromosomal sex</td>
<td>Schwartz pp. 12-27; view documentary The true story of John Merrick; Montagu, pp. 79-93 &amp; figs. in Appendix 6; Cohen 1987; Bilkay et al. 2003; Legendre et al. 2011; de Souza 2012</td>
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<tr>
<td>Nov M 6*</td>
<td>Bone remodeling part 1</td>
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</table>
Nov M 13  Metric and non-metric variation  Ubelaker 1989: 60-63; Lewis et al. 2011; Mays 1998; Turner 1989
Nov W 15  **SECOND EXAM**  None
Nov M 20*  Laboratory session  Shipman et al. 1984; Bohnert et al. 1998; Williams 2004
Nov M 27  Skeletal Cultural modifications  Ubelaker 1989: 96-107; Verano 2003; Duncan and Hofling 2011
Nov W 29  Skeletal taphonomy  Haglund 2001; Gould 2002; view documentary: *Iceman Murder Mystery*
Dec M 4*  Ethics and the study of human remains  Meighan vs Gulliford 1992; Meighan vs Zimmerman 1994; Jones and Harris 1998; view documentary *Mystery of the First Americans*
Dec W 6  Laboratory session and clean-up  None
Dec F 8  Final paper due no later than 5 pm

**Students with extra challenges**
If you are a student with a documented disability at Brandeis University and if you wish to request a reasonable accommodation for this class please see me immediately. Keep in mind that reasonable accommodations are not provided retroactively.

**Four-Credit Course (with three hours of class-time per week)**
Success in this 4 credit hour course is based on the expectation that students will spend a minimum of 9 hours of study time per week in preparation for class (readings, response to questions, preparation for discussions, writing of papers, preparation for exams, etc.).

**Use of Laptops, tablets, and other devices**
You are welcome to use a personal Laptop or tablet for note taking and researching. If a student is found using these devices for purposes other than those related to the class, his or her privilege for using it will be immediately suspended for the rest of the semester. The use of mobile phones (calls and text messaging) is not allowed.

**Class attendance**
Students who miss classes need to notify their absence well in advance and if necessary present relevant evidence. No more than two unexcused missed classes will be accepted; otherwise the final grade goes down half a letter for each additional missed class.
Assignments and Grading

• Class Participation and submission of written questions
In the four sessions marked with an asterisk, students are expected to participate in discussions. Participation in those sessions carries 10% of the final grade. You will reflect critically on the assigned readings and type two or three questions that both reflect your comprehension of the readings and highlight salient points that you think will contribute to the topic under discussion. At the end of each session students will submit their written questions (no late submissions will be accepted).

• Viewing of documentaries
During the course students are expected to view two documentaries and prepare responses to a set of questions revolving around them. Answering some of the questions involves as well the concomitant reading of assigned articles. The documentaries are available at the following links:

1- The True Story of John Merrick – https://www.youtube.com/watch?v=PUj8y0sCU2w
2- Mystery of the First Americans -

• Exams
There will be two exams, one on Monday October 16th and the other on Wednesday November 15th. The first exam counts 25% of the grade, while the second counts 30% of the final grade. Each examination will consist of bone stations requiring the identification of complete and partial human bones. The second exam will have, in addition, bone stations requiring the application of forensic techniques to make determinations on age, sex, bone remodeling, and natural or cultural modification to bone. The anatomical component of the exams is accumulative in order to reinforce your knowledge of skeletal anatomy. Students are required to use pencil and eraser when doing the exams, and can bring the textbook, class notes, or any other materials they deem necessary. In addition, comparative materials will be available during the test for hands-on consultation.

• Project Paper
The analysis of commingled remains from the small comparative collection of human remains in the Archaeology Laboratory at Brandeis will be conducted and submitted as group projects. On Wednesday November 29th each group will turn in a printed draft of the final paper for revision. The draft will be returned on Monday December 4th. The final version of the paper is due on Friday December 8th no later than 5 pm. Papers should be 6-8 pages of text, not including the bibliography. Photographs, illustrations, and diagrams are encouraged. Both a printed and an electronic version of the text and images, as well as the raw data in an Excel table should also be submitted. The term paper contributes 35% of the final grade. Included in the syllabus (see below) is a suggested bibliography for the project, but students should go beyond these readings and incorporate references not mentioned in the suggested bibliography. Papers should follow the stylistic and formatting guidelines of the SSA (Society for American Archaeology). These guidelines can be accessed at http://www.saa.org/StyleGuideText/tabid/985/Default.aspx
The grading of the papers will be based on their content, the logic of the argumentation, the relationship between stated hypotheses and data used to test them, the research resourcefulness, the lucidity of the writing, and on the adherence to the stylistic and formatting guidelines.
Summary of grading
Class participation 10%
First exam 25%
Second exam 30%
Project paper 35%

Academic integrity
Academic integrity is central to the mission of educational excellence at Brandeis University. Each student is expected to be familiar with, and to follow, the University’s policies on academic integrity. Please consult Brandeis University Rights and Responsibilities (http://www.brandeis.edu/studentaffairs/srcs/rr/) for all policies and procedures. All policies related to academic integrity apply to in-class and take home projects, assignments, exams, and quizzes. Students may only collaborate on assignments with express permission. Allegations of alleged academic dishonesty will be forwarded to the Director of Academic Integrity. Sanctions for academic dishonesty can include failing grades and/or suspension from the university.

Course readings (some available also at Library Reserve)

Bass, William M.

Bilkay, Ufuk, C. Tokat, C. Ozek, H. Gundogan, O. Erdem, T. Gurler, and A. Cagdas

Bohnert, Michael, Thomas Rost, and Stefan Pollak

Cohen, Michael M.

De Souza, RAG

Duncan, William N., and Charles Andrew Hofling
Gejvall, Nils-Gustaf

Gould, Richard A.

Haglund, William, D.

Iscan, Mehmet Yasar, and Susan R. Loth

Jaeger, Jonas Holm, and Veronica Liv Johansen

Jones, Gareth, and Robyn Harris

Legendre, Claire-Marie, C. Charpentier-Coté, R. Drouin, and Ch. Bouffard
2011 Neurofibromatosis Type 1 and the “elephant Man’s Disease: The Confusion Persists: An Ethnographic Study. Plos ONE 6(2): e16409. doi:10.1371/journal.pone.0016409


Mays, Simon

Meighan, Clement W., and Andrew Gulliford

Meighan, Clement W., and Larry Zimmerman
1994 Burying American Archaeology/ Sharing Control of the Past. Archaeology, November/December, pp.64-68.
Montagu, Ashley

Ortner, Donald, J.

Scheuer, Louise and Sue Black

Schwartz, Jeffrey, H.

Shipman, Pat, Giraud Foster, and Margaret Schoeninger

Thompson, T. J. U.

Tiesler, Vera, and Andrea Cucina

Turner, Christy G. II

Ubelaker, Douglas


Verano, John

Wells, C.

Williams, Howard


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**Suggested bibliography for project paper**

Andrews, John P.

Binford, L.R.


Fitting, James, E

Graves, Arthur H.

Greenman, Emerson Frank

Halsey, John, R. (editor)

Krakker, James J.
n.d.  *Mortuary Patterns at the Frazer Site (20SA9), Saginaw County, Michigan.* Unpublished manuscript.

Muhammad, Allison June

Murphy Carl, and Neal Ferris

Tainter, Joseph A.

Stothers, David M.

Stothers, David M., Scott Lozanoff, and William W. Baden
1978  *Middle to Late Woodland Biological Continuity within the Western Basin Tradition.* *Toledo Area Aboriginal Research Bulletin*, vol. 7 (1-2): 1-72. (excerpts only).

Vehik, Susan C.

**Recommended Bibliography**

*Entries marked by an asterisk are articles available in the last module of Latte*

Baker, Brenda and Lisa Kealhofer

*Bentley, Alexander
Binford, L.R.

1987 *Death, decay and reconstruction: approaches to archaeology and forensic science*. Manchester University Press, Manchester

Brothwell, Donald

Brothwell, Donald and A.T. Sandison

Grant, J.C.B.

Hauser, G. and DeStefano, G.F.

*Jay, Many et al.

Iscan, M.Y.
1989 *Age Markers in the Human Skeleton*. Charles C. Thomas, Springfield II.

*Kaestle, Frederika

*Klepinger, Linda L.

*Lee-Thorp, J.A.

*Leney, Clark, D.

Krogman, Wilton

Larsen, Clark S.

Mann, Robert W. and Sean P. Murphy

Owsley, Douglas and Richard Jantz

Powell, Mary Lucas, P.S. Bridges, and A.M.W. Mires

Reichs, K.J. (editor)

Rhine, Stanley

Roberts, Charlotte, and Keith Manchester

Saunders, Shelley R., and Anne Katzenberg

Saunders, Shelley R. and Ann Herring (editors)

Schurr, Mark R.

Steinbock, R. Ted

Steele, D. Gentry

Stewart, T.D.  

*Turner, Bethany et al.*  

Ubelaker, Douglas H.  

White, Tim D.  

Sinclair, David  

Sidney Smith  

Verano, John, and Douglas Ubelaker  

Verano, John, and Douglas Ubelaker (editors)  
1992  *Disease and Demography in the Americas.*  Smithsonian Institution Press, Washington D. C.