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 sex, the assessment of type of bone remodeling, cultural modifications to bone, and the impact of environmental processes on bony tissue. Consideration is also given to the study of morpho-metric and non-metric variation in the skeleton. Hands-on laboratory sessions will involve team analysis of human remains from the comparative collection in the Archaeology Laboratory at Brandeis.

Learning Goals
The aim of the course is for students to have full command of human skeletal anatomy and of basic forensic techniques, to learn how to do teamwork during the class project, and to learn how to design and carry out scientifically oriented research. The latter involves the empirical collection of data, the use of both quantitative and qualitative analyses, the formulation of explicitly stated hypotheses, and their rejection on the bases of the analysis of evidence. Furthermore, students will have the opportunity to practice their writing skills. The research paper is expected to follow stylistic and formatting guidelines from the Society for American Archaeology.
<table>
<thead>
<tr>
<th>Sessions</th>
<th>Topics</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept W 3</td>
<td>Introduction to the course</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Generalities</td>
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</tr>
<tr>
<td>Sept M 8</td>
<td>The Skull</td>
<td>Schwartz pp. 1-12 and Chap 2</td>
</tr>
<tr>
<td>Sept W 10</td>
<td>The Skull (cont.)</td>
<td>Schwartz Chap 3</td>
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<tr>
<td>Sept M 15</td>
<td>The Skull (cont.)</td>
<td>Scheuer &amp; Black Chapter 4</td>
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<tr>
<td>Sept W 17</td>
<td>Dentition</td>
<td>Schwartz Chapter 7</td>
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<td>Scheuer &amp; Black Chapter 5</td>
</tr>
<tr>
<td>Sept M 22</td>
<td>Postcranial: Axial skeleton</td>
<td>Steele &amp; Bramblett Chapters 5-6</td>
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<td>Lecture by Lauren Bader</td>
<td>Schwartz Chapter 4</td>
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<td></td>
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<td>Scheuer &amp; Black Chapters 6-7</td>
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<tr>
<td>Sept W 24</td>
<td>Postcranial: Upper extremities</td>
<td>Schwartz Chapter 5</td>
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<tr>
<td>Sept M 29</td>
<td>Postcranial: Upper extremities</td>
<td>Schwartz Chapter 5</td>
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<tr>
<td>Oct W 1</td>
<td>Postcranial: Lower extremities</td>
<td>Schwartz Chapter 6</td>
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<td></td>
<td>Review of first exam</td>
<td>Scheuer &amp; Black Chapters 10-11</td>
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<tr>
<td>Oct M 6</td>
<td>Postcranial: Lower extremities</td>
<td>Schwartz Chapter 6</td>
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<td></td>
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<td>Scheuer &amp; Black Chapters 10-11</td>
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<td></td>
<td></td>
<td>Bass 1987: 291-309,</td>
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<td></td>
<td></td>
<td>Ubelaker 1972: chap. 2</td>
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<tr>
<td>Oct W 8</td>
<td><strong>FIRST EXAM</strong></td>
<td>None</td>
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<tr>
<td>Oct W 15</td>
<td>Laboratory project begins</td>
<td>Ubelaker 2002; Gejvall 1963; Shipman et al. 1999; Williams 2004</td>
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<tr>
<td>Oct M 20</td>
<td>Forensic techniques: Assessment of age at death</td>
<td>Ubelaker 1972: 63-95</td>
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<tr>
<td>Oct W 22</td>
<td>Forensic techniques: Assessment of sex</td>
<td>Ubelaker 1972: 52-60</td>
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<tr>
<td>Oct M 27</td>
<td>Lab session to practice aging and sexing</td>
<td>None</td>
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<td><em>Film: The true story of John Merrick</em></td>
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<tr>
<td>Date</td>
<td>Activity</td>
<td>Reading Assignment</td>
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<td></td>
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<td>Verano and Ubelaker 1991; Wells 1967</td>
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<td>Nov 5</td>
<td>Lab session to identify bone remodeling</td>
<td>None</td>
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<tr>
<td>Nov 10</td>
<td>Skeletal Cultural modifications</td>
<td>Ubelaker 1972: 96-107</td>
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<td>Haglund 2002</td>
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<td>Nov 12</td>
<td>Skeletal taphonomy</td>
<td>Tiesler and Cucina 2006</td>
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<tr>
<td>Nov 17</td>
<td>Laboratory session</td>
<td>None</td>
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<tr>
<td>Nov 19</td>
<td><strong>SECOND EXAM</strong></td>
<td>None</td>
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<tr>
<td>Nov 24</td>
<td>Metric and non-metric variation</td>
<td>Ubelaker 1972: 60-63; Mays 1998;</td>
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<tr>
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<td><strong>Draft of Project Paper Due</strong></td>
<td>Turner 1989</td>
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<tr>
<td>Dec 1</td>
<td>Ethics and the study of human remains</td>
<td>Zimmerman 1989 and 1992; Meighan vs</td>
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<td><strong>Commented draft of paper returned</strong></td>
<td>Gulliford 1992; Meighan vs Zimmerman 1994;</td>
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<td>Jones and Harris 1998</td>
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<tr>
<td>Dec 3</td>
<td>Laboratory session</td>
<td>None.</td>
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<tr>
<td>Dec 8</td>
<td>End of Laboratory project and clean-up</td>
<td>None</td>
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<tr>
<td>Dec 12</td>
<td>Final paper due no later than 12:00 noon</td>
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</table>

**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.

**Attendance policy**

Regular attendance to class is expected. Absence from classes will only be accepted in cases of medical or extreme emergencies, and should be timely notified in person or by email. No more than one unexcused missed class will be accepted; otherwise the final grade goes down a third of a letter for each additional missed class.

**Reading assignments**

Reading assignments from the textbook and additional sources posted on Latte or accessed directly through urls embedded on the bibliography below should be completed by the dates indicated above. The assigned chapters from the textbook are meant to be done while studying the skeletal comparative collection in the Lab. Reading of all assigned materials is essential for your engagement in class.
Exams
There will be two exams, one on October 8th and the other on November 19th. The first exam counts 25% of the final grade; the second exam counts 35% of the final exam. 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 inferences about 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 tests for hands-on consultation.**

Research Report
The analysis of commingled remains from the small comparative collection of human remains in the Archaeology Laboratory at Brandeis will be conducted and presented as group reports. On November 24th each group will submit a printed draft of the report for revision. The commented draft will be returned on December 1st. The final version of the report is due on December 12th no later than 12:00 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 40% of the final grade, with a third of a letter subtracted each subsequent day if the paper is turned in after the submission deadline. No papers will be accepted after December 21st at 5pm. **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](http://www.saa.org/StyleGuideText/tabid/985/Default.aspx)
The grading of the papers will be based on their content, the relationship between stated hypotheses and data used to test them; the logic of the argumentation, the clarity of the writing, and he adherence to the stylistic and formatting guidelines.

**Summary of grading**

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>First exam</td>
<td>25%</td>
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<tr>
<td>Second exam</td>
<td>35%</td>
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<tr>
<td>Project paper</td>
<td>40%</td>
</tr>
<tr>
<td>Participation in class</td>
<td>extra credit</td>
</tr>
</tbody>
</table>

**Use of laptops, tablets, and phones**
Students are welcome to use a laptop computer or a tablet in class provided it is used for taking notes, for web searches specifically related to the topic being discussed, or for collecting the data for the team project. If a student is found using the laptop of other devises for purposes unrelated to the class, his/her right to use it will be immediately suspended for the rest of the summer session. The use of phones is not permitted.

**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/olc/MainContent/iS/story/Rights_and_Responsibilities.html)
(http://www.brandeis.edu/studentaffairs/srs/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.

**Required texts (available at the University’s bookstore)**

Schwartz, Jeffrey, H.

**Additional readings (posted on Latte or available on Library Reserve)**

Bass, William M.

Cohen, Michael, M. Jr

De Souza, Rag

Haglund, William, D,

Jones, Gareth, and Robyn Harris

Klepinger, Linda L.

Leney, Clark, D.
2006  Sampling Skeletal Remains for Ancient DNA (aDNA): A Measure of Success. *Historical Archaeology* 40 (3): 31-49. (posted on Latte)
Mays, Simon  

Meighan, Clement W./ Gulliford, Andrew  

Meighan, Clement W./ Zimmerman, Larry  
1994  Burying American Archaeology/ Sharing Control of the Past. Archaeology, November/December, pp.64-68. (posted on Latte)

Montagu, Ashley  

Ortner, Donald, J.  

Ortner, Donald, J. and Walter G.J. Putshar  

Scheuer, Louise and Sue Blac  

Schurr, Mark R.  

Steele, Gentry, and Claud A. Bramblett  

Tiesler, Vera, and Andrea Cucina  
Turner, Christy G. II  

Verano, John, and Douglas Ubelaker  

Wells, C.  

Zimmerman, Larry J.  


Suggested bibliography for Research Report

Gejvall, Nils-Gustaf  

Shipman, P., G. Foster, and M.J. Schoeninger  

Tainter, Joseph, A.  

Ubelaker, Douglas  


Williams, Howard

Additional Bibliography

Baker, Brenda and Lisa Kealhofer

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
1967    Diseases in antiquity; a survey of the diseases, injuries, and surgery of early populations. Charles C. Thomas, Springfield II.

Grant, J.C.B.

Hauser, G. and DeStefano, G.F.

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

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)
1995  Grave reflections: portraying the past through cemetery studies Canadian Scholars' Press, Toronto.

Steinbock, R. Ted

Steele, D. Gentry

Stewart, T.D.
1979  Essentials of Forensic Anthropology. Springfield, Ill.: Charles C. Thomas, Pub. This is a classic text in this field which maintains a healthy (i.e., questioning) attitude towards data and methods.

Ubelaker, Douglas H.
White, Tim D.

Sinclair, David

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