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 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 specific learning goals of the course is for the student 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 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.

**Course Outline**

<table>
<thead>
<tr>
<th>Sessions</th>
<th>Topics</th>
<th>Readings</th>
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<tbody>
<tr>
<td>Jan M 13</td>
<td>Introduction to the course</td>
<td>None</td>
</tr>
<tr>
<td>Jan W 15</td>
<td>Anatomical terminology</td>
<td>Schwartz pp. 1-12 and Chap 2</td>
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<tr>
<td>Jan W 22</td>
<td>The Skull</td>
<td>Schwartz Chap 3</td>
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<tr>
<td>Jan M 27</td>
<td>The Skull (cont.)</td>
<td>Schwartz Chap 3</td>
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<tr>
<td>Jan W 29</td>
<td>The Skull (cont.)</td>
<td>Scheuer &amp; Black Chapter 4</td>
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<tr>
<td>Feb M 3</td>
<td>Dentition</td>
<td>Schwartz Chapter 7</td>
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<tr>
<td>Feb W 5</td>
<td>Postcranial: Axial skeleton</td>
<td>Scheuer &amp; Black Chapters 4</td>
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<tr>
<td>Feb M 10</td>
<td>Postcranial: Upper extremities</td>
<td>Schwartz Chapter 5</td>
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<tr>
<td>Feb W 12</td>
<td>Postcranial: Upper extremities</td>
<td>Schwartz Chapter 5</td>
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<tr>
<td>Feb M 24</td>
<td><strong>FIRST EXAM</strong></td>
<td>None</td>
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<tr>
<td>Feb W 26</td>
<td>Postcranial: Upper extremities</td>
<td>Schwartz Chapter 5</td>
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<tr>
<td>Mar M 3</td>
<td>Postcranial: Lower extremities</td>
<td>Schwartz Chapter 6</td>
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<tr>
<td>Mar W 5</td>
<td>Postcranial: Lower extremities</td>
<td>Scheuer &amp; Black Chapters 10-11</td>
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<tr>
<td>Mar W 5</td>
<td>Review of first exam</td>
<td>Schwartz Chapter 6</td>
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<tr>
<td>Mar M 10</td>
<td>Forensic techniques:</td>
<td>Ubelaker 1972: 63-95</td>
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<td></td>
<td>Assessment of age at death</td>
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<tr>
<td>Mar W 12</td>
<td>Forensic techniques: Assessment of sex</td>
<td>Ubelaker 1972: 52-60</td>
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<tr>
<td>Mar M 17</td>
<td>Assement of age (cont.)</td>
<td>Ubelaker 1972: 63-95</td>
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<tr>
<td>Mar W 19</td>
<td>Forensic techniques: Assessment of sex</td>
<td>Ubelaker 1972: 52-60</td>
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<tr>
<td>Mar M 24</td>
<td>Lab session to practice aging and sexing</td>
<td>None</td>
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<tr>
<td>Date</td>
<td>Activity</td>
<td>Reading Material</td>
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<td><em>Film: The true story of John Merrick</em></td>
<td>Montagu, pp. 79-93 &amp; figs. in Appendix 6</td>
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<td></td>
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<td>Verano and Ubelaker 1991; Wells 1967</td>
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<td>Apr M 7</td>
<td>Laboratory session</td>
<td>None</td>
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<td>Apr W 9</td>
<td><strong>SECOND EXAM</strong></td>
<td>None</td>
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<tr>
<td>Apr M 14</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>Apr W 23</td>
<td>Skeletal taphonomy</td>
<td>Tiesler and Cucina 2006.</td>
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<td><strong>Draft of Project Paper Due</strong></td>
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<tr>
<td>Apr M 28</td>
<td>End of Laboratory project and clean-up</td>
<td>None</td>
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<tr>
<td>May F 2</td>
<td>Final paper due no later than 12:00</td>
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**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.

**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. Reading of these materials is essential for your involvement in class. Participation in class counts for extra credit to the final grade. Participation entails regular, on-time attendance to class. No more than one unexcused missed class will be accepted; otherwise the final grade goes down half a letter for each additional missed class.

**Exams**
There will be two exams (each 30%), one on February 24th and the other on April 9th. 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 test for hands-on consultation.

**Term Paper**
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 April 23rd each group will submit a printed draft of the final paper for revision. The draft will be returned on April 28th. The final version of the paper is due on May 2nd 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 letter subtracted each subsequent day if the paper is turned in after the submission deadline. No papers will be accepted after May 7th 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 logic of the argumentation, the relationship between stated hypotheses and data used to test them, the lucidity of the writing, and on the adherence to the stylistic and formatting guidelines.

**Summary of grading**
- First exam: 30%
- Second exam: 30%
- Project paper: 40%
- Participation in class: extra credit

**Important Notice**
Academic integrity is central to the mission of educational excellence at Brandeis University. Each student is expected to turn in work completed independently, except when assignments specifically authorize collaborative effort. It is not acceptable to use the words and ideas of another person without proper acknowledgement of that source. This means that you should cite and use quotation marks to indicate the source of any phrase, sentence, paragraphs or ideas found in published volumes, on the internet, or created by another student. Violation of University policies on academic integrity, described on Section 3 of Rights and Responsibilities, may result in failure in the course or on the assignment, and could end in suspension from the University. If you are in doubt about the instructions for any assignment in the course, you must ask for clarification.

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

Schwartz, Jeffrey, H.

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

Anawalt, R. Patricia
1982 Understanding Aztec Human Sacrifice. Archaeology vol. XX (20): 38-45. (posted on Latte)

Bass, William M.

Cook, S.F.
1946 Human Sacrifice and Warfare as Factors in the Demography of Pre-Colonial Mexico. Human Biology, vol. 18, pp. 81-102. (posted on Latte)

Gejvall, Nils-Gustaf

Haglund, William, D.

Harner, Michael
1977 The Enigma of Aztec Sacrifice. Natural History vol.86, no.4, pp.47-51. (posted on Latte)

Jones, Gareth, and Robyn Harris

Kleinger, 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

Ortiz de Montellano

Ortner, Donald, J.

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

Scheuer, Louise and Sue Blac

Schurr, Mark R.

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

Tiesler, Vera, and Andrea Cucina

Turner, Christy G. II

Ubelaker, Douglas


Verano, John, and Douglas Ubelaker

Wells, C.

Williams, Howard

Zimmerman, Larry J.


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.

Tainter, Joseph, A.

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.