Big History
From the Big Bang to the Present

History 101                          WF 2:45-4:00
Fall 2009                                                                  Brown Auditorium

History on the largest scale: the origins of the universe to the history of humanity and our unfolding present. An astronomer, geologist, biologist and historian trace the fundamental forces shaping change and continuity across time, with an eye to how history and the historical sciences learn about the past. Students will become conversant with the major eras and turning points in the history of the universe, planet, life on earth and humanity. Each team member will create one or more graded assignments and there will be a cumulative final project or exam at the end of the semester. This course is meant to get students to see links between various branches of knowledge and to ground all their learning in the widest possible perspective.

Teaching team:

Professor F. Paxton, Department of History (instructor of record)
Office hrs (301 Winthrop) M 2:00-3:00 and F 9:00-11:00 or by appointment: fspax or ext. 2298

Professor L. Brown, Department of Physics, Astronomy and Geophysics
Office hrs (210 Olin) M 1:15-2:30, Th 3:00-4:00 or by appointment: lfbro or ext: 2345

Professor D. Thompson, Department of Physics, Astronomy and Geophysics
Office hrs (203 Olin) T 12:00-1:30, W 12:00-1:30 or by appointment: dmtho or ext. 5016

Professor P. Barnes, Department of Biological Sciences
Office hours: (404 New London) MT 1:30-3:00 phillip.barnes or extension 2148

Books to buy:

David Christian, Maps of Time: An Introduction to Big History (Berkeley 2004)

Course requirements and Grading:

Attendance and participation is worth 15% of the course grade. As few as three unexcused absences can warrant a failing grade in the course. The first assignment is worth 5%. A series of weekly or bi-weekly assignments by members of the teaching team will constitute 60% of the course grade (15% each) and a final examination or project the remaining 20%. All assignments must be completed to pass the course. Assignments handed in late will be marked down unless prior arrangements are made. This is a writing intensive course and fulfills the Area 7 GE requirement.
If you have a physical or mental disability, either hidden or visible, which may require classroom, test-taking, or other reasonable modifications, please see me as soon as possible. If you have not already done so, please be sure to register with Sherine A, Miller, Director of Student Disability Services, at Extension 5428.

**Schedule of Class Meetings and Due Dates:**

**Introduction: Teaching Team**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading Material</th>
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<tbody>
<tr>
<td>F 9/4</td>
<td>Myth, Science and History</td>
<td>Christian, 1-12</td>
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<tr>
<td>T 9/8</td>
<td><em>First Assignment Due</em></td>
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<tr>
<td>W 9/9</td>
<td>Dating and Big History</td>
<td>Christian, 493-504; “Geology and Evolution: Mass Extinction at the K-T Boundary” (online)</td>
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**From the Big Bang to the Solar System: Professor Brown**

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading Material</th>
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<tr>
<td>F 9/11</td>
<td>Introduction to the Big Bang theory and evidence for this model</td>
<td>Christian, 17-38; and SciAm: <em>The Origin of the Universe</em> article (online)</td>
</tr>
<tr>
<td>W 9/16</td>
<td>Age of the Universe; Stages in the History of the Early Universe</td>
<td>Christian, 24-28; and SciAm: <em>The Origin of the Universe</em> article (online); <em>Dating the Age of the Universe</em> web site (link online); <em>WMAP: Determining the Age of the Universe</em> web site (link online)</td>
</tr>
<tr>
<td>F 9/18</td>
<td>Further Stages in the History of the Universe</td>
<td>Christian, 39-56; SciAm: <em>Out of the Dark Ages</em> article (online)</td>
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<tr>
<td>W 9/23</td>
<td>Formation of the Solar System I</td>
<td>Christian, 52, 57-67; <em>Solar System Formation: The Nebular Hypothesis</em> web site (link online)</td>
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<tr>
<td>F 9/25</td>
<td>Formation of the Solar System II and The Fate of the Cosmos</td>
<td>Christian, 52, 57-67; <em>Solar System Formation: The Nebular Hypothesis</em> web site (link online)</td>
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**From New Planet to Today’s Earth: Professor Thompson**

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<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading Material</th>
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<tr>
<td>W 9/30</td>
<td>Earth Composition and Characteristics</td>
<td>Christian, 67-75</td>
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Th 10/1  *Assignment for Professor Brown due*

F 10/2  Models Used to Describe Earth History

W 10/7  Modern Methods of Reconstructing Geologic History

F 10/9  *No class meeting: Fall Break*

W 10/14  The Grand Canyon: Explaining a Geologic Wonder
Vail, 1-104, Web Letters (on-line)

F 10/16  Chaos and Order in Big History
Christian, 505-511

T 10/20  *Assignment for Professor Thompson due*

**From Proteins to People: Professor Barnes**

W 10/21  History of the idea of evolution; Nature of the evolutionary process
Christian, 79-93

F 10/23  Nature of the evolutionary process (cont.); Origin of life
Christian, 93-105

W 10/28  History of life: phylogenetic patterns and phylogenetic trees
Christian, 106-136

F 10/30  Primates and the evolutionary origin of the human lineage
Christian, 138-169

W 11/4  Change and Continuity in the History of Life on Earth

Th 11/5  *Assignment for Professor Barnes due*

**Human History: Professor Paxton**

F 11/6  The Peopling of the Earth and the Age of Foragers
Christian, 171-203

W 11/11  The Agrarian Age I
Christian, 207-282

F 11/13  The Agrarian Age II
Christian, 283-332

**W 11/18** From the Agrarian to the Industrial Age I
Christian, 335-363

**F 11/20** From the Agrarian to the Industrial Age II
Christian, 363-405

**W 11/25** *No class meeting: Thanksgiving Break*

**F 11/27** *No class meeting: Thanksgiving Break*

**W 12/2** The Industrial Age I
Christian, 406-439

**F 12/4** The Industrial Age II
Christian, 440-464

**W 12/9** Change and Continuity in the History of Humanity

**Th 12/10** *Assignment for Professor Paxton due*

**Conclusion: Teaching Team**

**F 12/11** The Future and the Past
Christian, 467-491

**W 12/16** Evaluations and Final Review

**W 12/23** *Finals end at noon*