ANTH 4170/5170
FALL SEMESTER, 2013

GEOARCHAEOLOGY
M, W, & F 9:00 – 9:50 AM
Anthropology 150

Instructor:  Dr. Todd Surovell  Phone: 766-3239
Office: Anthropology 217   Email: surovell@uwyo.edu
Office Hrs:  Wednesday 1:00-2:30; Thursday 11:00-12:30
(or by appointment)

Subject Matter
Geoarchaeology is broadly defined as the application of geological methods to archaeological problems. Although the field of geoarchaeology is very broad in scope, this course is designed to specifically give students a basic introduction to geochronology (dating methods), geomorphology, and paleoenvironmental reconstruction in archaeological contexts. Topics covered include basic sedimentary processes, soil formation, depositional environments, site formation, and Quaternary paleoecology.

Course Structure: This course is scheduled to meet three times per week, on Mondays, Wednesdays, and Fridays. Class participation is expected and will be considered in the calculation of your final grade. Additionally, there is an all day field trip scheduled for Saturday, November 2 that students are expected to attend. Mondays and Wednesdays will consist of lectures, and most Fridays will be discussion days. On discussion days, students will give presentations to the class based on the assigned supplemental readings. Lecture days focus primarily on method and theory, while discussion days will emphasize application.

Readings: There is one textbook for the course:
Waters, M. R.

A number of supplemental readings will also be assigned, primarily for discussion days. Supplemental readings are available through the course website on WyoWeb. Supplemental readings will be presented by students on discussion days. All students are required to do all readings and material from the readings will appear on your exams. Please be courteous to your fellow students leading discussion and come to class prepared.

Grading:
Undergraduates will have three midterm exams and one final exam. The final exam will be cumulative. Exams will consist of multiple choice and short answer questions. A handful of additional short homework assignments will be given. Your grade will be calculated as follows:

Examinations: 80%; Assignments: 10%; Presentations: 10%

Graduate Students are required to complete all exams and assignments. Additionally, graduate students will write a 10-20 page term paper on a topic in geoarchaeology. The paper should be developed in consultation with me over the course of the semester. A short description of the term paper (one to two paragraphs in length) will be due by Friday, September 27. You are required
to hand in an outline and bibliography with at least 10-12 key works for your paper topic by Friday, November 15. The final paper is due on Friday, December 6. A rough draft of the paper is not required but is recommended. If you would like me to look over a rough draft, please get it to me at least 10 days prior to the final due date. The breakdown of grading for graduate students is:

Examinations: 40%; Term Paper: 40%; Assignments: 10%; Presentations: 10%

Final Exam
The final exam will be held on Wednesday, December 11 from 8:00 AM to 10:00 AM.

Policy on Make-Up Exams
Under most circumstances, no make-up exams will be administered. If you know you will not be able to attend class on the day of an examination, you should take the exam prior to the rest of class.

Student Presentations: Students are responsible for presenting geoscientific case studies to the class. This will typically occur on Fridays. It is your responsibility to lead discussion for your presentation. I strongly recommend that you present your case study in the form of a PowerPoint presentation. If you chose not to use PowerPoint, you should put together a handout for the class. In your presentation, you should cover the following issues: 1) What is the purpose of the study? 2) What are the major research questions? 3) What methods were used? 4) What were the findings? 5) Major conclusions. 6) Do you have any problems with the study? It is always a good idea to include a map showing the location of the study. Google Earth is an excellent tool for this purpose (It can be downloaded for free: http://earth.google.com/). Also, it is a good idea to show actual figures from the study. Be prepared to lead the discussion. One way to do this is to come prepared with discussion questions for the class, and do not hesitate to call on people. Undergraduates: You will find that many of the case studies we read in class are somewhat technical, and you may have trouble understanding some aspects of the papers. Please do not hesitate to come to see me to discuss the paper which you are presenting. I will not be happy if you give a presentation about something which you do not understand.

Fieldtrip: The class fieldtrip will involve a three miles hiking in the Laramie area. You should bring your own bag lunch and plenty of water. Be prepared for a variety of weather conditions from hot and sunny and to cold and snowy. If you have health issues that prevent you from engaging in strenuous physical activity, please let me know, and you will be excused from the fieldtrip. Also, if you have any physical disabilities or other issues of which I should be aware in the event of emergency, please let me know before the fieldtrip.

Disabled Students
If you have a physical, learning, or psychological disability and require accommodations, please let me know as soon as possible. You will need to register with and provide documentation of your disability to University Disability Support Services (UDSS) in SEO, room 330 Knight Hall. 766-6189, TTY: 766-3073

Academic Honesty
The University of Wyoming is built upon a strong foundation of integrity, respect and trust. All members of the university community have a responsibility to be honest and the right to expect honesty from others. Any form of academic dishonesty is unacceptable to our community and will not be tolerated. Teachers and students should report suspected violations of standards of academic honesty to the instructor, department head, or dean. Other University regulations can be found at: http://www.uwyo.edu/generalcounsel/.
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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Class Readings</th>
<th>Discussion Readings</th>
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<tr>
<td><strong>Section I: Geochronology</strong></td>
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<tr>
<td><strong>Week 1</strong></td>
<td>8/26, 8/28, 8/30</td>
<td>Waters Ch. 1</td>
<td>No discussion reading</td>
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<td></td>
<td>What is geoarchaeology, and why do we do it?</td>
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<td><strong>Week 2</strong></td>
<td>9/4, 9/6</td>
<td>Klein 1999</td>
<td>No discussion reading</td>
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<td>Labor Day 9/2</td>
<td>Intro to Quaternary geochronology, Part I</td>
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<td><strong>Week 3</strong></td>
<td>9/9, 9/11, 9/13</td>
<td>Scott et al. 2007; Beck et al. 1998</td>
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<td>Intro to Quaternary geochronology, Part II Same as above</td>
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<td><strong>Section II: Geomorphology</strong></td>
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<td><strong>Week 4</strong></td>
<td>9/16, 9/18, &amp; 9/20</td>
<td>Waters Ch. 2</td>
<td>No discussion readings</td>
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<td>Sediments and Soils Part I</td>
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<td><strong>Week 5</strong></td>
<td>9/23, 9/25, &amp; 9/27</td>
<td>Haynes 2008;</td>
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<td>Sediments and Soils Part II</td>
<td>Same as above</td>
<td>Surovell et al. 2009</td>
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<td>Exam 1 Friday 9/27</td>
<td>Alluvial Settings</td>
<td>Waters Ch. 3</td>
<td>Beach et al. 2006;</td>
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<td>Eolian Settings</td>
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<td>Bettis and Mandel 2002</td>
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<td><strong>Week 6</strong></td>
<td>10/7, 10/9, 10/11</td>
<td>Rick 2002;</td>
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<td>Caves, Rockshelters, Lakes, and Springs</td>
<td>Adelsberger et al. 2013</td>
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<td>Waters Ch. 5</td>
<td>Adams et al. 2008;</td>
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<td>Disturbance Processes</td>
<td>Ellwood et al. 2004</td>
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<td><strong>Week 7</strong></td>
<td>10/21, 10/23, &amp; 10/25</td>
<td>Discussion on Wed. 10/23</td>
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<td>Fieldtrip Sat 11/2</td>
<td>Why reconstruct past environments?</td>
<td>Waters Ch. 7</td>
<td>Peacock and Fant 2002;</td>
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<td>No reading</td>
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<td>Petraglia and Potts 1994</td>
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<td><strong>Section III: Quaternary Paleoecology</strong></td>
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<td>Fieldtrip Sat 11/2</td>
<td>Climate Change: General Principles</td>
<td>Bradley 1999:</td>
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<td><strong>Week 8</strong></td>
<td>11/4, 11/6, &amp; 11/8</td>
<td>Ch. 2</td>
<td>Richerson et al. 2001;</td>
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<td>Pollen, Phytooliths, and Macrobotanicals</td>
<td>Dincauze 2000:</td>
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<td><strong>Week 9</strong></td>
<td>11/11, 11/13, &amp; 11/15,</td>
<td>Ch. 13</td>
<td>Dunning et al. 1998;</td>
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<td>Faunal Paleoecology</td>
<td>Dincauze 2000:</td>
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<td><strong>Week 10</strong></td>
<td>11/18, 11/20, &amp; 11/22</td>
<td>Ch. 16</td>
<td>Graham et al. 1996; Elias 2000</td>
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<td>Fieldtrip Sat 11/2</td>
<td>No reading</td>
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<td><strong>Week 11</strong></td>
<td>11/25</td>
<td>No discussion reading</td>
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<td>(Thanksgiving)</td>
<td>Exam III, Monday 11/25</td>
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<td><strong>Week 12</strong></td>
<td>12/2, 12/3 (no class 12/6)</td>
<td>Stable Isotopes</td>
<td>Koch 1998</td>
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Supplemental Readings

Week 2
Klein, R. G.

Week 3
Beck, W., D. J. Donahue, A. J. T. Jull, G. Burr, W. S. Broecker, G. Bonani, I. Hajdas and E. Malotki
Scott, E. M., G. T. Cook, P. Naysmith, C. Bryant, and D. O'Donnell

Week 5
Haynes, C. V.
Surovell, T. A., J. B. Finely, G. M. Smith, P. J. Brantingham and R. L. Kelly

Week 6
Beach, T., N. Dunning, S. Luzzadder-Beach, D. E. Cook and J. Lohse
2006 Impacts of the ancient Maya on soils and soil erosion in the central Maya lowlands. Catena 65:166-178.
Bettis, E. A., III, and R. D. Mandel

Week 7
Rick, T. C.

Week 8
2004 Magnetic susceptibility applied as an age-depth-climate relative dating technique using sediments from Scladina Cave, a Late Pleistocene cave site in Belgium. Journal of Archaeological Science 31: 283-293.

Week 9
Petraglia, M. D. and R. Potts
Peacock, E. and D. W. Fant
Week 11
Bradley, R. S.
Richerson, P. J., R. Boyd and R. L. Bettinger
Kelly, R. L., T. A. Surovell, B. N. Shuman and G. M. Smith

Week 12
Dunning, N., D. J. Rue, T. Beach, A. Covich and A. Traverse
Coombes, P. M. V., Chiverrell, R. C. and Barber, K. E.
Dincauze, D. F.

Week 13
Elias, S. A.
Dincauze, D. F.