Archaeology for Teachers

Masters in Science Teaching Program
New Mexico Tech

Instructor:
Dr. Elisabeth A. Stone
estone@nmt.edu
phone: 201.344.2229

The easiest way to contact me is through email, which I check regularly. If you do not hear from me within 48 hours, please email me again in case there is some problem with the first email. Also, if I send an email with information or confirming an appointment, please send a brief reply so that I know that you received my message. I will be traveling frequently this semester, but I will be in Socorro or in Albuquerque frequently as well, so I am available to meet in person. If you would like to speak to me by phone, you can always send me an email and let me know what times are good for you and I will give you a call, or you may call me. I have voicemail on my cell phone and am generally prompt about returning phone calls. If you leave a message please let me know when is a good time for me to call back.

Course Goals: This course will introduce students to basic archaeological theory, techniques, and reasoning. The anthropological study of the human past is uniquely suited as a teaching tool in a range of sciences because of the multidisciplinary nature of modern archaeological research. Because archaeologists study all aspects of the human past, knowledge from other disciplines is regularly applied to the understanding of archaeological problems. Students in this course will become familiar with important archaeological research and significant prehistoric cultures, phases, and groups. Students will also gain an understanding of the interdisciplinary nature of archaeological research so that archaeological examples and exercises can be incorporated into the curriculum of a range of science courses.

Evaluation: Students will be graded based on 3 short papers, 3 archaeological assignments, 3 classroom activity plans, and one 12-15 page final paper. There are 4 papers, assignments and classroom plans in the syllabus; you may select one of each of these assignments to skip. As an alternative, you may do all 4 and I will drop the lowest grade. Students will be given more leeway with the selection of the final paper topic, although the topic must be approved by the course instructor. Additionally, I understand that MST students are also working full-time and may not be able to finish the course within the normal semester period. However, if you will be taking longer than one full calendar year to complete this course, please contact me so that we can decide on an appropriate schedule for completion of course requirements. Also, all students who have not made any progress in 6 weeks should contact me so that I know they are continuing with the course.
**Texts:** Two books are assigned for this course. Both are available used or new at amazon.com or campusi.com.

Renfrew, Colin and Paul Bahn  
2004 *Archaeology: Theories, Methods, and Practice*, Fourth Edition. Thames and Hudson, New York. (the 2nd or 3rd editions of this book are also fine, although there have been significant updates made to the 4th edition.)

Daniels, Steve and Nicholas David  

**Final:** A final paper will be assigned. The paper should be 10-12 double-spaced pages and should address a current topic in archaeological research. The topic should be considered from the perspectives of archaeology, anthropology and developments within other disciplines as appropriate. The topic chosen should be sufficiently complex to fill 10-12 pages, but specific enough to allow for a 1-2 page summary of the general issues, followed by discussion and analysis. Up to 3 pages of the paper may be, but are not required to be, spent on a consideration of how to best present this information in a classroom setting. You may select a topic at any time during the course, but the topic must be approved by the instructor. The following list will help get you started but you are certainly not confined to these topics.

*Suggested final paper topics:*

- the role of GIS (Geographic Information Systems) and GIT (Geographic Information Technology) in archaeology
- excavation techniques and scale of research
- CRM (Cultural Resource Management)
- NAGPRA (Native American Grave Protection and Repatriation Act)
- the archaeology of a particular region, including specific debates on the interpretation of the local archaeological record
- the Pleistocene-Holocene transition
- the origin of complex societies
- the origin of social roles (may include division of labor, development of systems of authority, social stratification)
- identifying mobility in the archaeological record
- the role of equifinality in archaeological research, including ways of addressing problems of equifinality
- feminist, indigenous or marxist archaeology and its relation to scientific approaches to archaeological research
- taphonomy and archaeological interpretation
- context and spatial integrity of archaeological deposits

**Final Exam:** A proctored final exam is required of all MST students. You may fulfill this either through a videoconferenced defense of your final paper via Skype or other videoconferencing software, or through a written exam. The final exam must be PROCTORED by a responsible party (principal or counselor); students must submit the name, title, and address of the responsible party before the last day to add classes (no exceptions). Failure to do so will result in the student being dropped from the class.
Course Schedule:

Week 1  Introduction to Archaeology: the anthropological approach, other approaches worldwide
➢  Reading: Renfrew and Bahn: Introduction
➢  Assignment: Introduction: please summarize your understanding of the field of archaeology and the role it could play in your classroom (~ 1 page)

Week 2  Archaeological Method I: archaeological problems, theory – processualism and postprocessualism, culture history, the nature of archaeological research and reasoning, excavation, survey, taphonomy, determining an appropriate scale of excavation, matching scale to problems
➢  Reading: Renfrew and Bahn: Chapter 1: The Searchers; Chapter 3: Where?
➢  Assignment: Archaeological Workbook: Select problem 1, 2 or 4

Week 3  Archaeological Method II: laboratory analysis, archaeological material, types of analysis
➢  Reading: Renfrew and Bahn: Chapter 2: What is Left?
➢  Assignment: Classroom Activity 1 – Archaeological Methods: Devise a 40-60 minute activity to be used in your classroom that teaches a technique of archaeological data collection or analysis. Include a substantial lecture outline or lecture notes, any handouts you might use, a list of necessary supplies, and an answer key. Also, include a cover letter that briefly explains the relevance of this activity to your discipline and curriculum and the relevance of the topic within the general goals of archaeological research.

Week 4  The Human Skeletal Record: osteological methods, paleopathology, the fossil record
➢  Reading: Renfrew and Bahn: Chapter 11: Who Were They? What Were They Like?
➢  Assignment: Paper 1 – Technology and Science in Archaeology: Write a 4-5 page, double-spaced paper addressing an archaeological method drawn from a different science. How is archaeological research multidisciplinary? What are some of the advantages and drawbacks of such research? Select a particular type of multidisciplinary research in archaeology and discuss the research both from an archaeological perspective and from the perspective of the other discipline. There are a wide range of topics available – I suggest selecting a technique drawn from your own area. Some examples include: biology: palynology, DNA studies, macrobotanical analysis, ethnoBotany, faunal analysis, identification of domestication morphology in plants or animals, seasonality studies; physics: radiocarbon dating, isotopic analysis, oxygen isotope stages, Ar-Ar dating, K-Ar dating; chemistry: taphonomic studies, bone chemistry analysis, isotopic analysis, residue analysis, conservation techniques and issues; geology: stratigraphic control, lithic or temper sourcing, petrographic analysis; general techniques: use of the scanning electron microscope, microscopy techniques and issues of scale, GIS as an analytical tool or a tool of data collection.

Week 5  Human Evolution I: early hominids, Australopithecines, mechanisms of human
evolution, the genus *Homo*, first stone tools, dating techniques

➢ **Reading**: Renfrew and Bahn: Chapter 4: When? [http://sci.waikato.ac.nz/evolution/HumanEvolution.shtml](http://sci.waikato.ac.nz/evolution/HumanEvolution.shtml) (you may also find the human evolution site at the Natural Museum of Natural History helpful: [http://www.mnh.si.edu/anthro/humanorigins/ha/a_tree.html](http://www.mnh.si.edu/anthro/humanorigins/ha/a_tree.html))

➢ **Assignment**: *Classroom Activity 2 – Human Evolution*: Construct a 40-60 minute classroom activity focused on teaching an element of human evolution in detail or contextualizing human evolution in an overall unit on evolution. Because of the recent challenges to the teaching of evolution, this may be a difficult subject to approach in the classroom. So, in your cover letter, you should address the same issues as in the previous activity – how this fits in with your curriculum and how it is related to archaeology and anthropology – but also how you will address the subjects of creationism and “intelligent design.” Include, as always, a lesson plan, lecture notes, and any handouts or assignments, with answer keys, that you will use.

**Week 6**  
**Human Evolution II**: the Middle Paleolithic, Neandertal debate, Out of Africa II, the problematic link between assemblages and species, the scavenger vs. hunter debate, what can we learn from faunal remains?

➢ **Reading**: Mellars 2004: “Neanderthals and the modern human colonization of Europe” (Available on course portal)

➢ **Assignment**: *Archaeological Workbook*: Select problem 7, 11, or 12

**Week 7**  
**The Ethnographic Record**: diversity in modern human lifeways, ethnographic analogy

➢ **Reading**: Renfrew and Bahn: Chapter 5: How Were Societies Organized? Chapter 10: What Did They Think?

➢ **Assignment**: *Paper 2 – Human Evolution*: Write a 4-5 page, double-spaced paper on an issue in paleoanthropology. Select a current debate in paleoanthropology and present an argument supporting one perspective. The discussion of the debate should include an overview of both (or several) sides along with a discussion of the basic evidence. Examples: what is the significance of *Homo florensiensis*? Did Neandertals contribute to the modern human gene pool? The use of mitochondrial and X-chromosome DNA to understand human evolution. Why are humans bipedal? What is a good definition for “human”? How can we explain, define, and identify behavioral modernity?

**Week 8**  
**The Archaeological Record I**: the Upper Paleolithic, definitions of modern behavior, symbolic behavior, the Ice Age, adaptations to climatic variation

➢ **Reading**: Renfrew and Bahn: Chapter 8: How Did They Make and Use Tools?

➢ **Assignment**: *Archaeological Workbook*: Select problem 6, 8, or 9

**Week 9**  
**The Archaeological Record II**: the Mesolithic, global warming at the Pleistocene-Holocene transition, permanent settlement, the Natufian culture

➢ **Reading**: Renfrew and Bahn: Chapter 12: Why Did Things Change?

➢ **Assignment**: *Classroom Activity 3 – Origins*: Devise a 30-60 minute classroom activity or a presentation and a take-home assignment on the concept of “origins” in archaeology. We have discussed a number of archaeological “firsts” in this
class: humans, bipedalism, tools, symbolic objects, movement out of Africa, settlement, writing, agriculture, social stratification, and others. My own research, which you have heard a lot about, is also focused on the identification of a “first.” What is important about identifying origins and how can this be a useful way of organizing archaeological research and thought? What are other approaches that are equally valid? The classroom activity could be focused on these questions or could more broadly look at the origins of any particular behavior or technology, but the presentation should at least touch on the relevance of origins-oriented research. Include a cover letter and all materials to be used in the activity, including an answer key or a list of points that you expect students to address.

Week 10  **The Archaeological Record III:** the late Neolithic, the origins of agriculture – debates in archaeology: the relevance of universal laws and generalized explanation
- **Reading:** Renfrew and Bahn: Chapter 7: What Did They Eat?
- **Assignment:** *Paper 3 – The Nature of Change*: Write a 4-5 page, double-spaced paper addressing the question of change over time in archaeological analysis. How does the scale of investigation affect views on change over time? What are some of the explanations that have been argued to explain the reason why people and their things change? Are these explanations mutually exclusive? Why? How might we distinguish between causes of change in the past? You may want to select a particular question or region to help you discuss how archaeologists look for the causes of change. Why is understanding the reasons for and the processes behind change important?

Week 11  **The Archaeological Record IV:** the New World, migration theories, Clovis First?
- **Reading:** Renfrew and Bahn: Chapter 6: What Was the Environment?
- **Assignment:** No assignment for this unit

Week 12  **The Archaeological Record V:** the origins of civilization in the Old World: the Fertile Crescent, Indus Valley
- **Reading:** Renfrew and Bahn: Chapter 9: What Contact Did They Have?
- **Assignment:** *Archaeological Workbook*: Select problem 3, 5, 10, or 13

Week 13  **The Archaeological Record VI:** complex societies in the Americas: Aztecs, Inka, Maya
- **Assignment:** *Paper 4 – Complex Societies*: Discuss one of the following: 
  a) What is the relevance of archaeological research to modern people? b) What are some similarities of early complex societies? What are some differences? What does this tell us about the origins of state-level socio-political organization? c) State-level organization developed independently several times in different locations in the world. However, certain similarities have led some people to incorrectly conclude that all socio-political complexity diffused from one origin (generally either the Middle East or Western Europe). Select one of these instances of similarity (for example: pyramids in Egypt and in the Mayan region; circular monumental structures in the Mississippian cultures and in late Neolithic cultures of the British Isles), citing evidence for independent development of these
Week 14  **Careers in Archaeology I:** cultural resource management, government and archaeology, careers in the National Park System

➢  **Reading:** Renfrew and Bahn: Chapter 14: Whose Past?
➢  **Assignment:** *Classroom Activity 4 – Careers in Archaeology:* Design a 30-60 minute unit in your classroom that looks at careers in archaeology. There are many different careers that may be of interest to students in New Mexico and that allow either the opportunity to travel or to stay close to home and fill an important role in the community. You may wish to consider asking a guest speaker to come to your class for this section. If so, feel free to contact that person and ask them to send you a brief outline of topics to be covered and that include that in your assignment. You might also think about a field trip, in which case I would like you to tell me how that field trip would demonstrate archaeological careers. You may also want to look back at earlier discussions of multi-disciplinary research and use that to organize the unit. Include a cover letter and all materials to be used, along with an answer key to any assignments.

Week 15  **Careers in Archaeology II:** museums, public outreach, popular archaeology, Native American Grave Protection and Repatriation Act (NAGPRA)

➢  **Reading:** Renfrew and Bahn: Chapter 13: Archaeology in Action
➢  **Assignment:** *Final Paper; Final Proctored Exam*